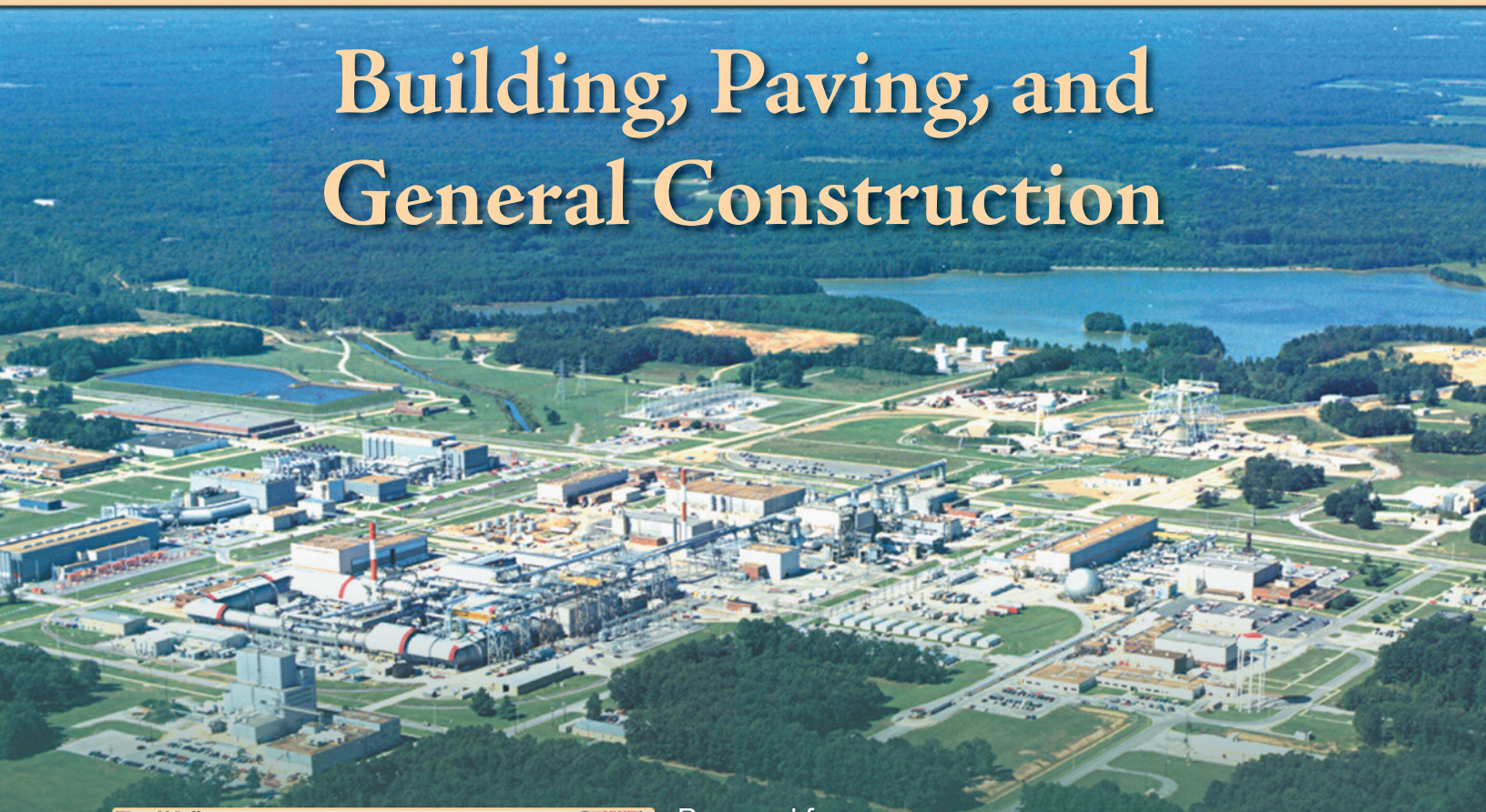
Final Environmental Assessment

Building, Paving, and General Construction



Prepared for

Department of the Air Force
Arnold Air Force Base, Tennessee

CH2MHILL

September 2005

EO72005024ATL

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
SEP 2005		**00-00-2005 to 00-00-2005**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Final Environmental Assessment Building, Paving, and General Construction	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **CH2M HILL,9191 South Jamaica Street,Englewood,CO,80112**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**126**	

Finding of No Significant Impact:
Arnold Air Force Base, Tennessee
Building, Paving, and General Construction

Arnold Air Force Base (Arnold AFB) has prepared an Environmental Assessment (EA) (February 2006) that evaluates the potential environmental and socioeconomic impacts associated with multiple building, paving, and general construction projects planned for the Base. This EA is incorporated by reference into this finding.

Description of the Proposed Action

The Proposed Action consists of 10 paving projects and 10 construction projects at multiple locations within and adjacent to the Arnold Engineering Development Center (AEDC) complex and along the north shore of Woods Reservoir. Existing gravel lots in proximity to the proposed work areas would be used as contractor yards and no additional support area would be disturbed outside the construction sites.

Paving Projects

- Construct Paved Parking for the Hazardous Materials Building.
- Pave Treatment Plant Road.
- Pave the Drive to the Salvage Yard.
- Pave the Lot at the Sandblast Facility.
- Construct a Turning Lane at the Gate 2 Entrance.
- Pave the Road in the FamCamp.
- Construct Off-Street Parking for Building 445.
- Pave Access Roads and Parking Near J-6 Complex.
- Construct a Concrete Vehicle Pad at LN2/GN2 Loading Facility.
- Modify GLC Parking Area.

Construction Projects

- Construct Consolidated Civil Engineering Complex.
- Construct New Consolidated PMEL and Chemistry Laboratory Complex.
- Construct New Fuels Laboratory at Operational Fuel Farm.
- Construct New BX Annex.
- Construct Storage Building Near ASTF Cooling Tower.
- Construct New Fitness Center.
- Construct Running Track and Warm-up Area North of Administration & Engineering Building parking lot.
- Install Permanent Oil/Water Separator and Associated Support Infrastructure at the Skimming Lagoon.
- Install a Chain-Link Fence to Separate the Industrial Area from the Community Support Area.
- Construct Conference Center Administration Building at the ALC.

The individual component projects are scheduled to be implemented between FY 2006 and FY 2009. The specific components of the Proposed Action are described in the attached EA. Surface disturbance resulting from the various projects would range from 400 square feet (ft^2) to 281,709 ft^2.

No-Action Alternative

The No-Action Alternative would be not to implement the components of the Proposed Action. Failure to upgrade existing facilities would result in continued deterioration of existing Base structures and limitations in Base activities. Vehicles would incur higher wear and maintenance costs from continued use of unpaved roads. Traffic disruptions along Wattendorf Highway would continue during deliveries to the Base. Force protection would not be enhanced by construction of a security fence between the industrial zone and community support area. Force protection issues would remain with regard to the Arnold Lakeside Club and Gossick Leadership Center.

Environmental Consequences

No significant negative environmental or socioeconomic consequences were identified in the EA for the Proposed Action. Under the Proposed Action, paving projects would convert approximately 9.74 acres of gravel roads/parking areas and 0.09 acre of unimproved grounds to paved roads and paved parking areas. Additionally, 0.11 acre of land currently paved would be converted to improved grounds. Construction projects would convert approximately 0.11 acre of existing improved, 3.14 acres of semi-improved, and 6.12 acres of unimproved grounds into buildings, parking areas, and landscaping. There would be a loss of 6 acres of forested habitat, but this loss would be within the industrialized portion of the base and would constitute much less than 0.01 percent of the total forested habitat on Arnold AFB. Approximately 16 acres of impervious surface would be created but approximately 9.74 of these impervious acres would show little change in runoff conditions (paving of unpaved roads and graveled lots). Additionally, construction and post-construction stormwater controls would prevent deterioration of water quality and downstream impacts from runoff. There would be no significant impacts to protected species, sensitive habitats, or cultural resources.

Public Comment Period

A Notice of Intent to sign a FONSI for these proposed construction projects described in the EA was published in local newspapers on 16 December 2005 and the comment period ended 16 January 2006.

Restrictions

Contractors would be required to comply with the Tennessee Erosion & Sediment Control Handbook and the Tennessee Water Quality Control Act of 1977 to minimize impacts from soil erosion and impacts to water quality. All appropriate Best Management Practices (BMPs) for building, paving and general construction would be followed.

Construction and post-construction stormwater controls designed to minimize or eliminate the effects of increased runoff would be required. Tennessee requires that Notices of Intent (NOIs) for National Pollutant Discharge Elimination System (NPDES) Stormwater Construction Permits be filed with TDEC for all projects disturbing one or more acres. Four projects included under the Proposed Action would require these NOIs (pave lot at the sandblast facility, pave access roads and parking near the J-6 Complex, construct consolidated CE Complex, and construct consolidated PMEL/Chemistry Laboratory Complex).

Installation Restoration Program (IRP) sites would require monitoring during excavation in areas overlapping Solid Waste Management Units (SWMUs) to prevent exposure of the workers to the potentially hazardous material. Construction plans would include appropriate worker protection measures. The construction crew would have a health and safety plan and a hazardous materials plan as reference documents in case contaminated soils were encountered. Appropriate health and safety steps would be required during construction to limit possible exposure to vapors or contaminated soil. Any contaminated soil encountered during construction would be disposed of in accordance with all applicable laws and regulations.

Should construction of any of the proposed projects have the potential to impact eligible or potentially eligible historic properties or archaeological sites, additional consultation with the State Historic Preservation Office (SHPO) and/or American Indian Tribal Governments may be required.

No other actions or restrictions are necessary for the Proposed Action.

Conclusion

The attached EA was prepared pursuant to 32 Code of Federal Regulations (CFR) 989 and U.S. Council on Environmental Quality (CEQ) regulations (Title 40, U.S. Code, Parts 1500-1508) for implementing the procedural requirements of the National Environmental Policy Act (NEPA). The finding of this EA is that the Proposed Action would have no significant impact on the human or natural environment. Therefore, a Finding of No Significant Impact (FONSI) is issued for the Proposed Action and no Environmental Impact Statement (EIS) is required.

Decision to proceed with the proposed action is contingent upon funds availability and final approval of the AEDC Commander.

David L. Stringer

DAVID L. STRINGER, Brig Gen, USAF
Commander

Date: 22 Mar 06

Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

AEDC	Arnold Engineering Development Center
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AFMC	Air Force Materiel Command
AFOSH	Air Force Environmental and Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
ALC	Arnold Lakeside Club
ASTF	Aeropropulsion Systems Test Facility
BMP	Best Management Practice
BX	Base Exchange
CAA	Clean Air Act
CE	Civil Engineering
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMS	Corrective Measures Studies
CWA	Clean Water Act
CVOCs	chlorinated VOCs
dB	Decibel
dB_a	A-weighted Decibel Scale
DBST	Double Bituminous Surface Treatment
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
EO	Executive Order
EHR	Eastern Highland Rim
ESA	Endangered Species Act
ESHQ	Environmental, Safety, Health, and Quality
FamCamp	Family Camping Area
ft^2	Square feet
FY	Fiscal Year
GLC	Gossick Leadership Center
gpm	Gallons per Minute
HMA	Hot Mix Asphalt
HQ	Headquarters
IRP	Installation Restoration Program
kV	Kilovolt
LDN	Day-Night Average Noise Level
MTA	Main Test Area
NCGP	No Consumption--General Public
NEPA	National Environmental Policy Act

NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PMEL	Precision Measurement Equipment Laboratory
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
ROW	Right-of-Way
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SWMU	Solid Waste Management Unit
TDEC	Tennessee Department of Environment and Conservation
TSCA	Toxic Substances Control Act
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USC	U.S. Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WQA	Water Quality Act

1.0 Purpose and Need for Action

1.1 Background

Arnold Air Force Base (AFB) is located in Coffee and Franklin Counties in Middle Tennessee. Arnold AFB is approximately 70 miles southeast of Nashville, the state capitol. Positioned near the towns of Manchester, Tullahoma, and Winchester, Arnold AFB is the largest employer in the two-county area (Figure 1-1).

Arnold AFB occupies 39,081 acres including the 3,632-acre Woods Reservoir. On Arnold AFB, there are 5,785 acres of cultivated pine forests and 23,492 acres of hardwood forests. Grasslands and early-successional habitats in utility rights-of-way (ROWs) occupy 1,479 acres on the installation and provide habitat for numerous rare species (Call, 2003; P. Sherrill personal communication, 2005).

1.1.1 Operations

Arnold Engineering Development Center (AEDC), which is located on Arnold AFB, is the most advanced and largest complex of flight simulation test facilities in the world, with 53 aerodynamic and propulsion wind tunnels, rocket and turbine engine test cells, space environmental chambers, arc heaters, ballistic ranges, and other specialized units. Facilities can simulate flight conditions from sea level to altitudes of more than 100,000 feet, and from subsonic velocities to those well over Mach 20.

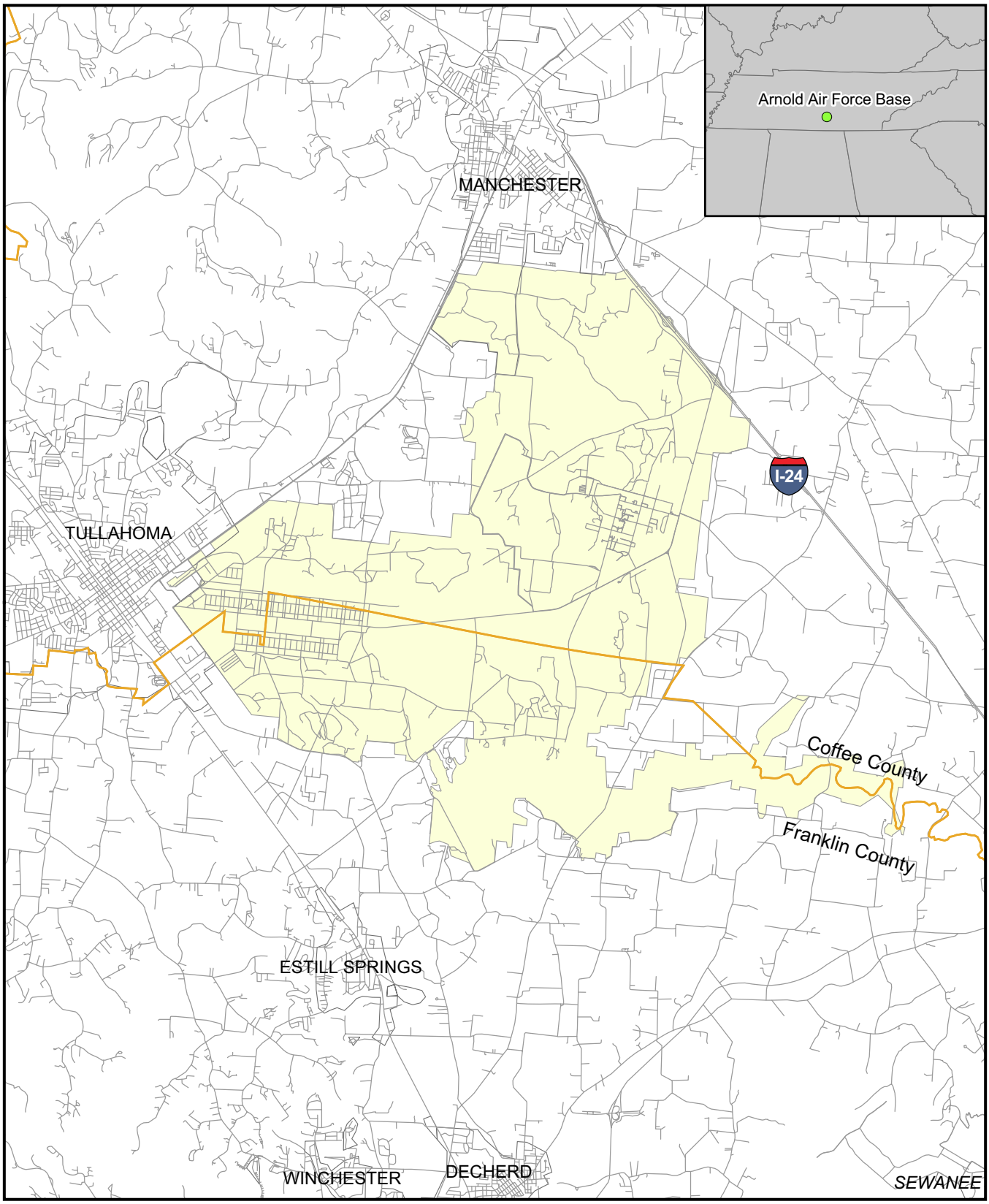
1.1.2 History

Arnold AFB is named for the late General Henry H. "Hap" Arnold, Commander of the Army Air Forces. In 1949, Congress authorized $100 million for the construction of AEDC. On 25 June 1951, 1 year after General Arnold's death, President Harry S. Truman dedicated the AEDC.

1.1.3 Military Mission

The existing military mission is to support the development of aerospace systems by testing hardware in facilities that simulate flight conditions.

The Department of Defense (DoD) mission requires that natural and cultural resources be managed to provide for the environmental security necessary to support the military mission of national defense. By conserving biodiversity, ecosystem management contributes to national security by helping maintain the natural resources upon which this country's strength depends. Ecosystem management also helps maintain natural landscapes for military training. Combat readiness is founded on the ability of the armed forces to sustain realistic military training now and into the future. DoD is also a steward of significant cultural resources that provide information on the development of DoD and the country.



Legend

- Road Centerline
- County Boundary
- Arnold AFB

Figure 1-1

Arnold Air Force Base and General Vicinity

Building, Paving, and General Construction
Final Environmental Assessment

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1.2 Proposed Action

The Proposed Action consists of 10 paving projects and 11 construction projects within the AEDC compound and at the family camping area (FamCamp). The individual component projects are scheduled to be implemented between Fiscal Year (FY) 2005 and FY 2009.

1.2.1 Paving Projects

- Construct Paved Parking for the Hazardous Materials Building.
- Pave Treatment Plant Road.
- Pave the Drive to the Salvage Yard.
- Pave the Lot at the Sandblast Facility.
- Construct a Turning Lane at the Gate 2 Entrance.
- Pave the Road in the FamCamp.
- Construct Off-Street Parking for Building 445.
- Pave Access Roads and Parking Near J-6 Complex.
- Construct a Concrete Vehicle Pad at LN2/GN2 Loading Facility
- Modify Gossick Leadership Center (GLC) Parking Area.

1.2.2 Construction Projects

- Construct Consolidated Civil Engineering Complex.
- Construct New Consolidated Precision Measurement Equipment Laboratory (PMEL) and Chemistry Laboratory Complex.
- Construct New Fuels Laboratory at Operational Fuel Farm.
- Construct New Base Exchange (BX) Annex.
- Construct Storage Building Near Aeropropulsion Systems Test Facility (ASTF) Cooling Tower.
- Construct New Fitness Center.
- Construct Running Track and Warm-up Area Southeast of Building 100 within the Circle of Kindel Drive.
- Install Permanent Oil/Water Separator, Electric Air Compressor, and Three Air-Powered Pumps at Skimming Lagoon. Also, Construct 20-foot by 20-foot Storage Building and Gravel Staging Area Sufficient to Hold a Minimum of Six 1,500-gallon Polytanks.
- Install a Chain-link Fence to Separate the Industrial Complex from the Community Support Area.
- Construct Conference Center Administration Building at the Arnold Lakeside Club (ALC).
- Relocate Marina/Dock from Arnold Village to GLC Area and Construct Marina Maintenance Building Near Relocated Dock.

1.3 Need for Proposed Action

The need for each component of the Proposed Action is discussed below.

1.3.1 Paving Projects

Pave Parking for the Hazardous Materials Building: The unpaved parking lot is rutted and has severe potholes, creating difficult conditions for vehicle and pedestrian traffic enroute to the building. Customers and building occupants must walk through mud and water during inclement weather.

Pave Treatment Plant Road: The road currently requires higher than normal maintenance because of ruts and potholes, and results in excess wear on government and personal vehicles that must travel the road and use Building 1555 parking.

Pave the Drive to the Salvage Yard: The roadway to the Salvage Yard and Warehouse VI is in very poor condition. Heavy equipment and trucks frequently use this route. After heavy rains, this section of road must be graded and reshaped to permit smooth and safe traffic flow.

Pave the Lot at the Sandblast Facility: Paving this area would enable better containment and collection of sandblast residue, which may contain lead-based paint residues.

Construct a Turning Lane at the Gate 2 Entrance: Gate 2 is the entry point for all delivery vehicles. A turning lane would improve traffic flow, provide definite lanes for turning traffic, prevent through vehicles from driving around on the shoulder, and reduce potential for intersection accidents.

Pave the Road in the FamCamp: Paving would eliminate nuisance dust created by traffic on the unpaved roads and eliminate the problems with unpaved roads during wet weather.

Construct Off-Street Parking for Building 445: There is no parking for Building 445. At present, customers for Building 445 either park illegally along von Karman Road or park more than 500 feet from the building in the parking lot of the Main Café.

Pave Access Roads and Parking Near J-6 Complex: The roads and parking areas in the J-6 Complex are rutted and contain potholes. A high level of maintenance is required to keep these areas serviceable.

Construct a Concrete Vehicle Pad at LN2/GN2 Loading Facility: Loading and unloading liquid and compressed gas containers presently occur on an unpaved lot. Because of the unpaved surface, it is difficult to maintain clean conditions and containers.

Modify GLC Parking Area: The parking area for the GLC would be expanded to comply with force protection requirements for set-back distances from parking areas. Additional new parking area would be required adjacent to the existing lot to replace parking spaces displaced for establishing set-back distance.

1.3.2 Construction Projects

Construct Consolidated Civil Engineering Complex: This component of the Proposed Action would consolidate the shops and operational Civil Engineering (CE) workforce into a modern and efficient complex necessary to provide support for everyday operations. Current operations are scattered throughout 10 substandard facilities.

Construct New Consolidated PMEL and Chemistry Laboratory Complex: Construction of a new building would consolidate PMEL and chemistry lab facilities into one building.

Construct New Fuels Laboratory at Operational Fuel Farm: This component of the Proposed Action would provide life safety requirements as specified in IAW NFPA101, NFPA 45, Air Force Environmental and Occupational Safety and Health (AFOSH) Standard 91-38, and Military Handbook 1008C.

Construct New BX Annex: The existing Annex was a temporary facility and a new facility is warranted for storing items.

Construct Storage Building Near ASTF Cooling Tower: This component of the Proposed Action would provide storage of potentially hazardous materials without exposure to weather and would extend the useful life of the bromine trailer. At present, these materials are stored outside.

Construct New Fitness Center: This component of the Proposed Action would relocate the Fitness Center into the community support portion of the Base, outside the additional security fence.

Construct Running Track and Warm-Up Area Southeast of Building 100 within the Circle of Kindel Drive: This component of the Proposed Action would construct a new running track suitable for timed runs, fitness testing, and group exercise. This track would eliminate the need to conduct fitness testing on roads or on loose gravel areas.

Install Permanent Oil/Water Separator and Supporting Infrastructure at Skimming Lagoon: This component of the Proposed Action would allow for proper maintenance of the Skimming Lagoon and more efficient handling of lagoon sludge and removed fuels and oils. Failure to maintain the Skimming Lagoon in proper operating condition could impact the ability to perform the mission within regulated environmental constraints.

Install a Chain-Link Fence to Separate the Industrial Complex from the Community Support Area: This component of the Proposed Action would further improve security and force protection on Arnold AFB. This security fence would allow greater access to the community support area of the Base and increased security for the Industrial Complex.

Construct Conference Center Administration Building at the ALC: It is proposed to convert the ALC into a multi-purpose conference center that would allow conference center services to be moved from the GLC to be adjacent to the Base lodging facility. The conference center would not contain sufficient space for guest reception and other administrative services, which would be provided by the proposed Administration Building.

Relocate Marina/dock from Arnold Village to GLC Area and Construct Marina Maintenance Building Near Relocated Dock: It is proposed to relocate the public boat rental marina from Arnold Village to comply with force protection requirements and to better serve guests at the proposed

new conference center. The relocation would reduce non-resident traffic in Arnold Village. A small Maintenance Building would be required to support marina functions.

1.4 Related Environmental Documents

The following documents were used in the preparation of this Environmental Assessment (EA):

- Integrated Ecosystem Management Plan 2003, Arnold Engineering Development Center, Arnold Air Force Base, Tennessee, for Arnold Air Force Base, prepared by Geoff Call, Conservation Biologist, ACS Environmental Services, Conservation.
- Historic Building Survey and Evaluation, Arnold Air Force Base, Coffee and Franklin Counties, Tennessee, Draft Report. December 2001, submitted by TRC Garrow Associates, Inc., Atlanta, Georgia, and CH2M HILL, Atlanta, Georgia; M. Todd Cleveland, Architectural Historian and Author, Jeffrey L. Holland, Historian and Author.
- Final Environmental Assessment: Proposed Fiscal Year 2004 Harvest of Pine and Hardwood Pulpwood/Sawtimber, Arnold AFB, Tennessee. April 2004. CH2M HILL.
- Geo-Marine, Inc. 2005. Draft Report: Historic Building and Associated Landscape Inventory and Evaluation, Arnold Air Force Base, Tennessee. Volume I. Prepared for United States Air Force AEDC/SDE, Arnold AFB, Tennessee.

1.5 Decision To Be Made

A decision must be made about whether to implement the construction and paving projects at Arnold AFB during the period from FY 2005 through FY 2009 or to maintain current conditions at the proposed project locations.

1.6 Applicable Regulatory Requirements and Coordination

Any projects that result in the disturbance of greater than 1 acre require a construction stormwater permit from the Tennessee Department of Environment and Conservation (TDEC). This permit is obtained by filing a Notice of Intent (NOI) with TDEC for coverage under the Construction Stormwater General Permit. No other permits would be required from the state.

The following regulations and coordination are applicable to one or more components of the alternative actions as described in this EA:

- The National Environmental Policy Act (NEPA) of 1969
- Title 40 of the Code of Federal Regulations (CFR), Parts 1500-1508 (40 CFR 1500-1508)
- 32 CFR 989
- DoD Directive 6050.1 (32 CFR 214)

- Air Force Instruction (AFI) 32-7064
- Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality (amended by EO 11991)
- The Endangered Species Act (ESA)of 1973 (16 U.S. Code [USC] 1531-1543),
- The Fish and Wildlife Coordination Act, (16 USC 661, et seq.),
- The Migratory Bird Treaty Act (16 USC 701, et seq.)
- The Clean Water Act (CWA) of 1977 and the Water Quality Act (WQA) of 1987 (33 USC 1251 et seq., as amended)
- EO 11990, Protection of Wetlands
- EO 12372, Intergovernmental Review of Federal Programs
- The Farmland Protection Act of 1981 (7 USC 4201 et. seq., as amended)
- DoD 4165.57, Air Installation Compatible Use Zone (AICUZ)
- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (as amended by the Superfund Amendments and Reauthorization Act [SARA] of 1986)
- The Resource Conservation and Recovery Act (RCRA) of 1976
- The Toxic Substances Control Act (TSCA)
- The National Historic Preservation Act (NHPA) of 1966 (16 USC 470 et seq., as amended)
- The Protection of Historic Properties (36 CFR 800) Act
- The Archeological Resources Protection Act of 1979
- EO 11988, Floodplain Management
- The Clean Air Act (CAA) (42 USC 7401 et seq., as amended)
- The Noise Control Act of 1972
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risk

1.7 Authority

This document was prepared in accordance with the requirements of the NEPA of 1969, the Council on Environmental Quality (CEQ) regulations of 1978, and 32 CFR Part 989. To initiate the environmental analysis, the proponent (Arnold AFB) submitted a Request for Environmental Impact Analysis – Air Force (AF) Form 813 (Appendix A).

1.7.1 Issues Eliminated from Detailed Analysis

The Proposed Action would not have the potential for significant impacts on all resource areas on Arnold AFB. Consequently, the resource areas identified below have been eliminated from detailed analysis in this document.

1.7.1.1 Air Installation Compatible Use Zone

Arnold AFB has an active airfield and an exemption from Headquarters (HQ) Air Force Materiel Command (AFMC) for AICUZ because of the limited number and type of flying operations. The components of the Proposed Action are not within any accident potential zones, do not encroach on the airfield, and would not impact airfield operations (Figure 1-2).

1.7.1.2 Geology

No activities conducted under the Proposed Action would affect the underlying geologic features of Arnold AFB.

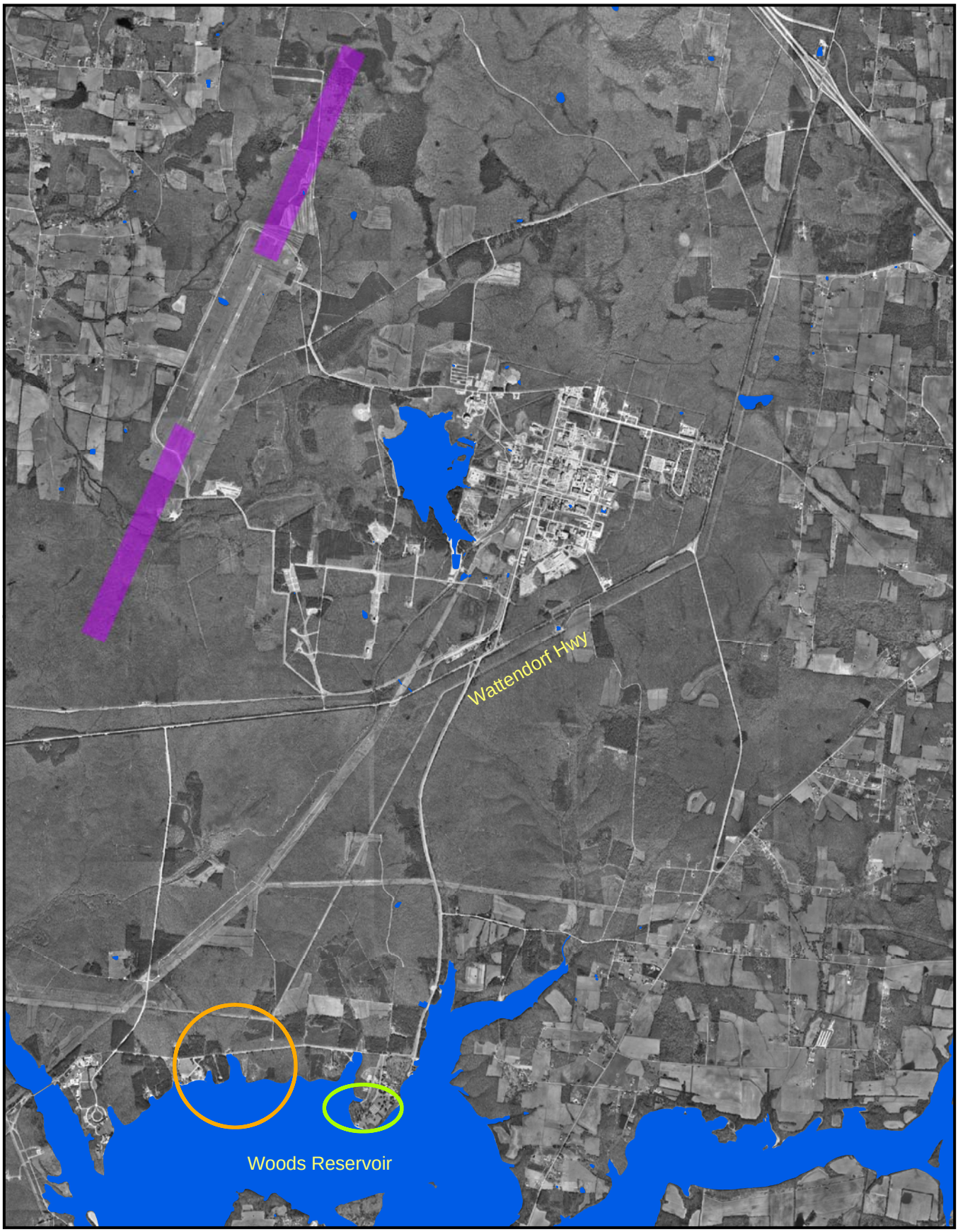
1.7.1.3 Environmental Justice and Protection of Children

Implementation of the components of the Proposed Action would not impact minority or low income population groups. None of the components of the Proposed Action would present environmental health or safety risks to children. Therefore, environmental justice and protection of children were eliminated as issues warranting further analysis.

1.7.2 Issues Studied in Detail

The resource areas below are discussed in detail in this document.

- Land Use
- Geomorphology
- Hydrology
- Water Quality
- Biological Resources
- Safety and Occupational Health
- Noise
- Air Quality
- Hazardous Materials and Installation Restoration Program (IRP)
- Cultural Resources
- Traffic Flow and Utility Infrastructure
- Socioeconomic Factors



Legend

- Marina/Arnold Lakeside Club Area
- FamCamp/Gossick Leadership Center
- Road
- Reservoir
- Air Accident Potential Zones

N

0 2,750 5,500 Feet

Figure 1-2
Location of Proposed Action and Designated AICUZ
Building, Paving, and General Construction
Final Environmental Assessment

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1.8 Document Organization

This EA follows the organization established by the CEQ regulations (40 CFR, Parts 1/500-1508). This document consists of the following sections:

1.0 Purpose and Need for Action
2.0 Description of the Proposed Action and Alternatives
3.0 Affected Environment
4.0 Environmental Consequences
5.0 Plan, Permit, and Management Requirements
6.0 List of Preparers
7.0 List of Contacts
8.0 References
Appendices

2.0 Description of Proposed Action and Alternatives

As required by federal regulation, this EA addresses the possible environmental impacts of the Proposed Action and a No-Action Alternative. This section provides a summary of the issues and potential impacts associated with the Proposed Action and No-Action Alternative.

2.1 Proposed Action (Preferred Alternative)

The Proposed Action consists of 10 paving projects at multiple locations, 11 construction projects within the AEDC compound, a paving project in the FamCamp, and a paving project along Wattendorf Highway outside of the Gate 2 entrance to AEDC.

Existing gravel lots in proximity to the proposed work areas would be used as contractor yards and no additional support area would be disturbed outside the construction sites.

2.1.1 Paving Projects

2.1.1.1 Pave Parking Area for the Hazardous Materials Building

Currently the Hazardous Materials Building has an unpaved parking lot to its north (Figure 2-1). Approximately 5,000 ft^2 of this existing gravel and dirt lot would be paved with concrete. Only the area currently used for parking would be paved.

2.1.1.2 Pave Treatment Plant Road

This action would pave 1,500 feet of Treatment Plant Road from 4th Street south (Figure 2-1), to the main sewage treatment plant. Paving Treatment Plant Road would involve regrading, placement of road base, and application of asphalt pavement along this 24-foot wide roadway. Total paved area would be 36,000 ft^2.

2.1.1.3 Pave the Drive to the Salvage Yard

A hot mix asphalt (HMA) surface would be placed over binder course and surface course to provide a more durable road than the current deteriorated double bituminous surface treatment (DBST) pavement along the Salvage Yard entrance drive from Avenue C to the Environmental Area and Warehouse VI parking lot (Figure 2-1). The new paved road would be approximately 300 feet long and 24 feet wide (7,200 ft^2) and would have aggregate shoulders and painted markings.

2.1.1.4 Pave the Lot at the Sandblast Facility

An approximately 600-foot by 250-foot area (150,000 ft^2 or 3.4 acres) at the new sandblasting facility would be paved to provide a stable work and delivery area (Figure 2-1). The paving would entail regrading, placement of road base, and application of asphalt pavement.

Legend

- Streams
- Proposed Paving
- Proposed Parking Paving
- Proposed construction
- Existing Buildings
- Reservoirs

N

0 500 1,000 2,000 Feet

Figure 2-1
Proposed Construction and Paving Activities in the AEDC Compound
Building, Paving, and General Construction
Final Environmental Assessment

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2.1.1.5 Construct a Turning Lane at the Gate 2 Entrance

A 1,200-foot turning lane 12 feet wide (14,400 ft^2) would be added to Wattendorf Highway to facilitate through traffic and turning of delivery trucks from Wattendorf Highway into AEDC at Gate 2 (Figure 2-1). This project would require demolition and replacement of the existing gate sign; clearing, grubbing, excavating, and backfilling; relocation of existing utilities; construction of new storm drains; and construction of bituminous pavement with thermoplastic markings and snow-plowable pavement markers. There would be no shoulder expansion and no relocation of existing road ditches to complete this project. During construction, manual traffic control would be provided to minimize the impact on local traffic.

2.1.1.6 Pave the Road in the FamCamp

Approximately 1,300 feet of an existing 20-foot wide unpaved road through the FamCamp would be paved (Figure 2-2). The activity would involve regrading, placement of road base, and application of asphalt. Total paved area would be 26,000 ft^2.

2.1.1.7 Construct Off-street Parking for Building 445

A new parking area covering 4,000 ft^2 near the delivery entrance for Building 445 would be constructed. This component of the Proposed Action would provide off-street parking for this facility, improve traffic flow for deliveries, and reduce pedestrian traffic risks. Presently, occupants and visitors park on von Karman Road. The proposed parking lot would be placed in an area that is currently landscaped grass with a sidewalk located on the west side of Building 445 (Figure 2-1).

2.1.1.8 Pave Access Roads and Parking near J-6 Complex

This component of the Proposed Action would pave 180,000 ft^2 along three sections of road with chip seal (Figure 2-1):

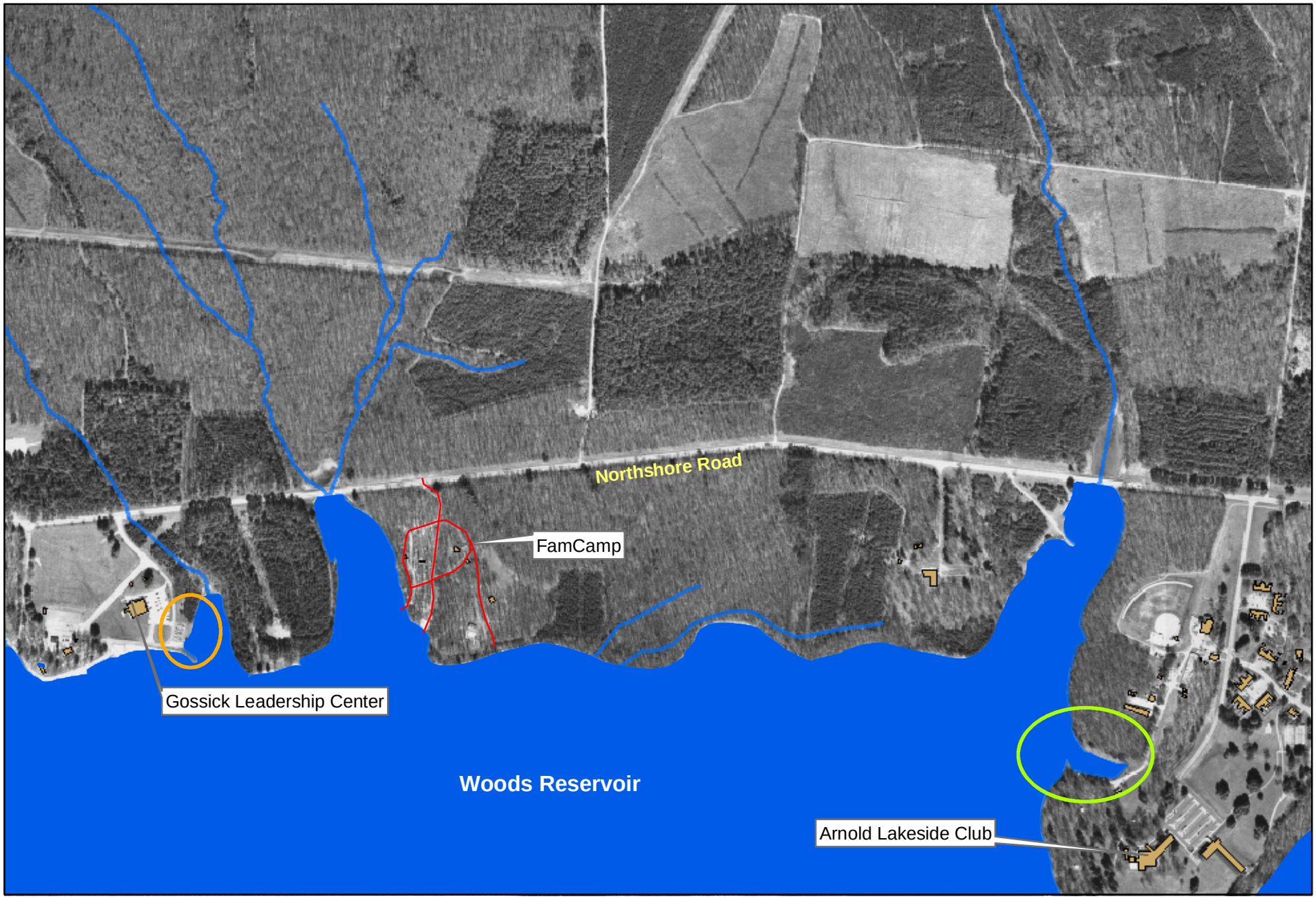
- The approximately 0.5-mile road between the J-6 Test Cell and the J-4 Test Cell.
- The 0.3-mile spur between the J-6 Test Cell and the Instrument and Control Corridor.
- The approximately 0.5-mile road between the J-6 Test Cell and the J-6 Steam Plant.

In addition, parking areas totaling 5,000 ft^2 around buildings would be paved. Paved parking would be limited to those dirt and gravel areas now used for parking.

This project would require clearing, grubbing, excavating, backfilling, and construction of bituminous pavement. Limited relocation of existing utilities may be required. During construction, manual traffic control would be provided to minimize on-Base traffic disruption in the J-6 Complex area.

2.1.1.9 Construct a Concrete Vehicle Pad at LN2/GN2 Loading Facility

A 400-ft^2 concrete vehicle pad would be constructed at the LN2/GN2 loading facility (Figure 2-1). The concrete vehicle pad would be placed over the dirt and gravel lot currently used for loading and unloading gas and liquid gas containers. Only the area currently used for vehicles would be converted to the concrete pad.



Legend

- Existing Buildings
- Existing Marina
- Reservoir
- Boat Dock Relocation Area
- Proposed Paving
- Streams

N

0 250 500 1,000 Feet

Figure 2-2

Proposed Construction and Paving Activities Near Woods Reservoir

Building, Paving, and General Construction
Final Environmental Assessment

File Path: \\Boomer\G\projects2\ArnoldAFB\AEDC_Construction_EA\MXDs\Paving_activities_AEDC_compound.mxd, Date: November 16, 2004, User: BBODINSO

2.1.1.10 Modify GLC Parking

Approximately 5,000 ft^2 of existing parking area at GLC would be converted to landscaped lawn and approximately 5,000 ft^2 of landscaped lawn would be converted to paved parking (Figure 2-2). Parking areas would be graded and paved. Existing paved parking displaced for set-back requirements would be removed and disposed in an appropriate construction waste site. Area would then be made compatible with landscaping in the area. Limited walkways would be installed to accommodate pedestrian traffic.

2.1.2 Construction Projects

2.1.2.1 Construct Consolidated CE Complex

The Consolidated CE Complex would be constructed and would contain 64,584 ft^2 of Base maintenance shops and 29,295 ft^2 of administrative support (Figure 2-1). An additional 187,830 ft^2 of pavement would be developed for parking, vehicle access, and covered storage. Stormwater catch basins and drainage ditches would be included in the design to accommodate increased runoff. Approximately 5 acres of mixed hardwood and pine forest, 1 acre of semi-improved land, and 0.5 acre of a former building site would be converted to building and pavement.

The Maintenance Complex would provide storage for small equipment and tools, lockers, and office space. Large equipment, such as backhoes, trucks, tractors, manlifts, bucket trucks, mowers, etc., would be located in the yard area adjacent to the building. The complex supports repair and maintenance of the AEDC infrastructure including grounds maintenance, and building water, wastewater, and stormwater service lines. Incidental fabrication work associated with the repair and maintenance activities is performed in carpenter and plumbing shops at the Maintenance Building.

2.1.2.2 Construct New Consolidated PMEL and Chemistry Laboratory Complex

A 40,095-ft^2 facility would be constructed to consolidate the PMEL and Chemistry Laboratory into one complex. The building would be constructed between the existing PMEL and Chemistry Laboratory facilities, Buildings 445 and 350 in a space occupied by three existing structures slated for demolition (Figure 2-1).

2.1.2.3 Construct New Fuels Laboratory at Operational Fuel Farm

A new Fuels Laboratory would be constructed adjacent to the Operational Fuel Farm (Figure 2-1). The new laboratory would occupy 4,000 ft^2 and would be located in an existing gravel lot.

2.1.2.4 Install Permanent Oil/Water Separator and Supporting Infrastructure at Skimming Lagoon

This component of the Proposed Action would include construction of a new 1,000-gallon-per-minute (gpm) oil/water separator, a 1,600-ft^2 reinforced concrete sludge dewatering pad, and a 400-ft^2 storage building at the Skimming Lagoon (Figure 2-1). An electric air compressor with capacity to supply air simultaneously to a drum skimmer, a weir skimmer,

and three air-powered pumps would be installed. The storage building would house spill equipment, safety equipment, coveralls, and a small boat. The storage building would be supplied with lights, heat, and electrical outlets. Additionally, there would be a gravel staging area sufficient to hold a minimum of six 1,500-gallon polytanks. Installation would require clearing and grading, building construction, and extension of utilities to the storage building and air pump.

2.1.2.5 Construct New Base Exchange (BX) Annex

A 1,200-ft^2 lean-to type storage building would be constructed for the BX. Installation would involve placement of the support poles and construction of the roof adjacent to the existing BX Building (Figure 2-1). This would replace an existing structure.

2.1.2.6 Construct New Fitness Center

A new Fitness Center approximately 30,000 ft^2 in size would be constructed near the main gate. Two potential locations have been tentatively identified for the center (Figure 2-1). Site A is south of the Administration and Engineering Building and Site B is west of the BX.

2.1.2.7 Construct Running Track and Warm-up Area Southeast of Building 100

A 0.25-mile running track with a rubberized running surface would be constructed southeast of Building 100 within the circle of Kindel Drive (Figure 2-1). A 3,000-ft^2 warm-up/stretching pad would be constructed adjacent to the track.

2.1.2.8 Construct Storage Building Near Aeropropulsion Systems Test Facility (ASTF) Cooling Tower

An 800-ft^2 Bromine Trailer Storage Building (20 feet by 40 feet) with drive-through doors on each end would be constructed (Figure 2-1). The two sets of drive-through doors and interior layout of the building would allow the bromine trailer to be pulled straight through the building while other materials and equipment are stored in the building. The interior perimeter of the building would be curbed to provide spill protection. The building would be supplied with heat, exhaust fans and louvers, lighting, electrical outlets, safety shower, and eyewash. A crane/lift would be installed to aid in loading, unloading, and moving oil drums. Once operational, the building would store the trailer used to transport granular bromine.

2.1.2.9 Install a Chain-link Fence to Separate the Industrial Complex from the Community Support Area

A chain-link security fence would be installed to separate the Industrial Complex from the community support area and fitness trail. The fence would surround the fitness trail and the area containing the Administration and Engineering Building, the medical aid station, and the BX/Commissary. The fence would contain pedestrian gates with card readers and motorized vehicle gates with card readers to allow after-hours access to the Industrial Complex. Installation would require limited land clearing to facilitate placement of the fence, augering holes for fence-posts, and placement of concrete post anchors.

2.1.2.10 Construct Conference Center Administration Building

An approximately 3,500-ft^2 Administration Building would be constructed near the ALC (Figure 2-2). The building would accommodate guest reception and other administrative services to support the conference center.

2.1.2.11 Relocate Marina and Construct Maintenance Building

Construct a 10-slip marina for commercial boat rental and an approximately 1,200-ft^2 Maintenance Building near the existing docks in the ALC area (Figure 2-2). The marina would be placed as a floating structure in Woods Reservoir with a boardwalk connecting it to the shore.

2.1.3 Area Affected by Proposed Construction and Paving Projects

The individual projects are scheduled to be implemented by FY 2009. Surface disturbance resulting from the various projects would range from 400 square feet (ft^2) to 281,709 ft^2 (Table 2-1).

TABLE 2-1
Summary of Surface Area Required for Construction and Paving Projects
Building, Paving, and General Construction Final EA

Project	Surface Area (ft^2)
Paving Projects	
Hazardous Materials Building Parking	5,000
Treatment Plant Road	36,000
Salvage Yard Drive	7,200
Sandblast Facility Lot	150,000
Turning Lane at Gate 2 Entrance	14,400
Roads in FamCamp	26,000
Off-street Parking for Building 445	4,000
Access Roads and Parking near J-6 Complex	185,000
LN2/GN2 Vehicle Pad	400
GLC Parking Lot Expansion	5,000
Construction Projects	
Consolidated Civil Engineering Complex	281,709
Consolidated PMEL and Chemistry Lab Complex	40,095
Fuels Laboratory	4,000
Separator, Compressor, Pumps and Storage Building at Skimming Lagoon	2,000
Base Exchange Annex	1,200
Fitness Center	30,000
Running Track and Warm-up Area	3,000
Storage Building Near ASTF Cooling Tower	800
Chain-link Security Fence	2,000
Conference Center Administration Building	3,500
Marina and Maintenance Building	2,500

2.2 No-Action Alternative

The No-Action Alternative would be not to implement the components of the Proposed Action. Failure to construct new buildings and pave roads would result in continued use of deteriorated buildings and unimproved roads and parking areas. Additionally, health, safety, and force protection concerns would not be addressed.

2.2.1 Alternatives Considered but Not Carried Forward

NEPA requires that the Proposed Action, No-Action Alternative, and any other practicable alternatives be considered in the analysis. The components of the Proposed Action include multiple paving and construction projects.

For paving project components, either the designated sections of existing roads would be paved or not. There were no alternative locations or actions considered that would meet the defined project purpose.

Areas designated for paved parking or vehicle pads were unpaved locations currently used for parking. Any other areas that could have been used for paved parking would have required converting areas not currently used for parking into new parking facilities or would have been located inappropriately for mission work to be accomplished (i.e., the vehicle pad for the LN2/GN2 loading facility).

Sites selected for building construction are constrained both by the planned uses for the buildings and the limited availability of suitable parcels of land. The Fuels Laboratory, PMEL Laboratory, BX Annex, ASTF Cooling Tower Storage Building, and projects at the Skimming Lagoon are limited by the need to be near the buildings they support. The location of the CE Complex is limited by the size of the complex and the need for it to be within the AEDC. The security fence must be placed to delineate the boundary between the industrial and community support areas. For these structures, the only suitable alternatives were either to build or not.

Two locations were considered for the Fitness Center. Site A is south of the Administration and Engineering Building, and Site B is west of the BX (Figure 2-1). Site B was removed from consideration because a Fitness Center at this site would require that persons choosing to utilize the fitness trail would have to park at the Fitness Center, make a pedestrian crossing of von Karman Road, and walk more than 2,000 feet to reach the trail. von Karman Road is one of the most heavily used roads on AEDC, and this situation would create traffic and personal injury risks. Use of Site A would place Fitness Center parking adjacent to the fitness trail area. In addition, Site B would entail more damage to natural resources, as this site is wooded while Site A is landscaped and was the site of demolished Building 1100.

2.2.2 Comparison of Alternatives Carried Forward

The Proposed Action and the No-Action Alternative are compared in Table 2-2.

TABLE 2-2
Comparison of Impacts of Considered Alternatives
Building, Paving, and General Construction Final EA

Resource Area	Proposed Action	No-Action Alternative
Land Use	Minor grading for site preparation.	No Impacts.
Geomorphology		
Hydrology	Increase in impervious area would result in increase in stormwater runoff. Use of construction and post-construction stormwater Best Management Practice (BMPs) for the project would manage any increase in stormwater runoff and prevent other than minor impacts to hydrology.	No Impacts.
Water Quality	Potential for increased sedimentation and pollutant loading from stormwater runoff during construction and following operation of facilities. Use of appropriate stormwater pre- and post construction stormwater BMPs would prevent other than minor impacts. Long-term benefit to water quality from reduction of sediment from unpaved roads. Long-term benefit to water quality from construction and operation of the new Skimming Lagoon.	Continued loss of minor amounts of sediments/runoff from unpaved roads and lots.
Biological Resources	Minor loss of wildlife habitat through conversion for construction and paving.	No Impacts.
Safety and Occupational Health	No Impacts	No Impacts.
Noise	Construction-related noise would be generated.	No Impacts.
Air Quality	Fugitive dust would be generated during construction. Long-term benefit to air quality from decrease in dust generated from unpaved roads.	Continued release of minor amounts of fugitive dust from unpaved roads and lots.
Installation Restoration Program and Hazardous Materials	Potential for exposure of contaminated soils during construction. Construction techniques would be designed to avoid exposure. Appropriate response measures to potential exposures would minimize risk.	No Impacts
Cultural Resources	No impacts in areas that have previously been cleared by cultural resource surveys. Other areas would be surveyed prior to work. Findings would be coordinated with State Historic Preservation Office (SHPO) to determine National Register of Historic Places (NRHP) listing eligibility and appropriate actions taken to mitigate potential impacts.	No Impacts
Traffic Flow and Utility Infrastructure	Short-term construction-related traffic delays associated with the areas where specific building and paving activities would be done. Manual traffic control would be provided as a project design feature to minimize disruption and inconvenience.	Continued traffic congestion at Gate 2 and continued traffic delays on Wattendorf Highway behind delivery trucks waiting to enter Arnold AFB by turning left from Wattendorf Highway.
Socioeconomic Factors	Temporary increase in construction employment. Minor enhancement to recreation opportunities for Arnold AFB staff.	No Impacts

BMPs = Best Management Practices

3.0 Affected Environment

3.1 Land Use

Arnold AFB occupies 39,081 acres including the 3,632-acre Woods Reservoir, which provides cooling water for facilities in AEDC. AEDC occupies 6,000 acres, generally centrally located, and includes the airfield. Approximately 4,683 acres of the installation are occupied by wildlife food plots, buildings/structures, mowed/bushhog areas, and other open areas, such as landfills, roads, etc. (Call, 2003). There are 105 miles of roads on Arnold AFB, approximately 50 percent of which are paved (CH2M HILL, 2002). Approximately 436 acres of Arnold AFB's property consists of paved areas, structures, or water. The remaining lands are considered un-improved and include forest and agricultural lands (AEDC, 2004). These lands include cultivated pine forests totaling approximately 5,785 acres and hardwood forests totaling 23,492 acres. Grasslands and early-successional habitats in utility ROWs that occupy roughly 1,479 acres on the installation and provide habitat for numerous rare species (Call, 2003).

Much of the land within the AEDC compound has already been developed. Within AEDC, approximately 575 acres are classified for industrial land use, approximately 25 acres are classified for administration, and 100 acres are classified for recreation as the fitness trail area. Around the airfield, approximately 350 acres are classified for military training uses. Most of the remainder of the AEDC area is classified for conservation uses, but some of this land is for transportation and utility uses. Remaining areas that are considered developable within the AEDC compound are those not currently occupied by buildings or pavement (Figure 3-1). Absent redevelopment of areas that currently support mission components, any future development within AEDC must be done on these developable lots.

The Proposed Action includes projects that would redevelop certain areas within AEDC and development on some buildable parcels (Figure 3-1). Buildable parcels are those areas that could be developed and are not presently occupied by structures or facilities. All buildable parcels are within AEDC and most have been designated for industrial use. Areas that would lie east of the security fence would be available to develop for administration and recreational purposes.

Specific land uses in areas proposed for construction or paving are described below.

- The area proposed for Building 1456 parking currently is a 0.11-acre graveled area used for parking.
- Treatment Plant Road, the drive to the Salvage Yard, the access roads near the J-6 Complex, and the roads in FamCamp are constructed gravel roads and gravel parking areas covering a total of 8.52 acres.

Legend

- Buildings
- Buildable Parcels
- Reservoirs
- Eggert's Sunflower Occurences

N

0 500 1,000 2,000
Feet

Figure 3-1
Available Buildable Parcels
Building, Paving, and General Construction
Final Environmental Assessment

File Path: W:\Construct_Pave EA 072605\Figure 3-1 buildable parcels.mxd, Date: 08 25, 2005, User: CHORACE

- The 0.17-acre lot at the sandblast facility is subjected to heavy use and has had gravel added to the surface for stability.
- The turning lane proposed at the Gate 2 entrance would be placed within the existing cleared and graded ROW of Wattendorf Highway and cover 0.33 acre.
- The area proposed for off-street parking for Building 445 is 0.09 acre of graveled area and adjacent lawn between Building 445 and Building 451.
- The 0.01-acre area proposed for a vehicle pad at the LN2/GN2 loading facility has been graveled and used for vehicle parking and for cylinder loading, unloading, and storage.
- The GLC parking area modifications would occur on a 0.11-acre paved parking area and 0.11 acre of landscaped lawn.
- The site for the Consolidated Civil Engineering Complex (Photo 1, Appendix B) is a 6-acre site that currently contains a mix of hardwoods and pines (5.0 acres), open grassed area (1.0 acre), and a demolished building site (0.5 acre).
- The site for the Consolidated PMEL and Chemistry Laboratory Complex (Photo 2, Appendix B) primarily contains a mix of hardwoods and pines (0.92 acres), with a cleared grassed area along the road (0.5 acre).
- The new Fuels Laboratory (Photo 3, Appendix B) would be placed on a 0.09-acre site adjacent to Building 870, in an area where a smaller building would be demolished.
- The new BX Annex (Photo 4, Appendix B) would be placed on 0.05 acre of an existing paved lot.
- The proposed storage building (Photo 5, Appendix B) near the ASTF cooling tower would be placed on the site of an existing building occupying 0.02 acre.
- The site proposed for the new Fitness Center (Photo 6, Appendix B) was formerly the site of Building 1100, which has been demolished. The 0.6-acre site currently has a mix of scattered trees and open grassed areas.
- The site for the proposed running track and warm-up area (Photo 7, Appendix B) southeast of Building 100 is within the circle of Kindel Drive. The 0.53-acre site has a mix of trees and open grassed areas.
- The permanent oil/water separator (Photo 8, Appendix B) and associated support infrastructure at the Skimming Lagoon would be placed in a 0.05-acre area of existing forest and open grassed areas.
- The chain-link fence to separate the Industrial Complex from the community support area would be placed within forested and open grassed areas. Cumulatively, fence poles would be placed on 0.05 acre of forest and open grassed area.
- The Conference Center Administration Building would be placed on 0.08 acre of land previously cleared for development and landscaping.

- The relocation of the Marina/Dock from Arnold Village to the GLC area and construction of a marina Maintenance Building near the relocated dock would be placed on 0.03 acre of land previously cleared for development and landscaping.

3.2 Geomorphology

Geomorphology, as discussed here, refers to landforms, slopes (topography/relief), and soils at the Arnold AFB area. A detailed discussion of the geomorphology occurring on Arnold AFB was presented in *Final Environmental Assessment: Proposed Fiscal Year 2004 Harvest of Pine and Hardwood Pulpwood/Sawtimber, Arnold AFB, Tennessee* (CH2M HILL, 2004a). Analysis of this feature helps to establish the relationships between various elements of the environment (geology, hydrology, vegetation, and wildlife). The topography at Arnold AFB ranges from relatively flat with poor surface drainage in the northern portion of the installation to moderately rolling with defined stream channels in the southern section.

Arnold AFB lies within the Eastern Highland Rim (EHR) physiographic region of Tennessee (Miller, 1974). Elevations range from about 1,100 feet above sea level at the drainage divide to 890 feet above sea level in the valleys. In the areas north and northeast of Arnold AFB, there are many swamps and internally drained depressions. Stream channels there are poorly defined and stay dry through much of the summer and fall (Haugh and Mahoney, 1994).

Soils on Arnold AFB primarily belong to the Dickson-Mountview-Guthrie Association (Love et al., 1959; Springer and Elder, 1980; Patterson, 1989). The Dickson silt loam and Mountview silt loam are the most important soils on well-drained slopes and ridges. The Dickson soil has a discontinuous fragipan (relatively impermeable layer) that restricts subsoil drainage (Love et al., 1959). The fragipan layer contributes to the patterns of seasonal flooding observed at Arnold AFB by restricting drainage during the relatively wet winter months and by limiting the upward movement during the dry summer months.

The Dickson-Baxter-Greendale soil association also occurs on Arnold AFB. It is an extensive soil association on the Highland Rim and occupies 13.3 percent of Coffee County. Typical relief for this association includes large, almost level or undulating areas with steeper slopes near drainageways. The drainage pattern is dendritic, but streams are neither numerous nor well entrenched. Imperfectly and moderately drained soils predominate (United States Department of Agriculture [USDA] Soil Conservation Service, 1949).

Prior to construction and paving activities, geotechnical surveys would be conducted to determine if sites are suitable for each project. A summary the total surface area required for the construction and paving projects for this EA is presented in Table 2-1 Most of the project sites are in areas where soils have been heavily disturbed in the past, as discussed below. Soils associated in the Arnold AFB area vary in composition and permeability characteristics. These soils include the Dickson silt loam series (DkA, DkB, DkC, and Dka), which are moderately drained soils and are associated with upland areas. The Guthrie silt loam soil series (GuA) are soils that are poorly drained and are associated with flats, depressions, and floodplain areas. The Lawrence silt loam soils (LaA) are somewhat poorly drained soils and are associated with floodplains and foot slopes. The Lobelville silt loam soils (LbA) are moderately well drained and are associated with floodplains and foot slopes.

The Mountview silt loam soil series (MoA, MoB, and MoC) are moderately well drained soils and are associated with upland areas. The Montview gravely silt series (MtC and MtD) are well drained soils and are associated with upland areas. The Purdy silt loam soils (PuA) are poorly drained and are associated with flats, depressions, and floodplain areas. The Waynesboro loam soil series (WaA) are well drained and are associated with upland areas. Soils annotated as W are water-related and soils indicated as Unk are classified as unknown. Soils associated with construction activities are shown in Figures 3-2 and 3-3.

The area proposed for Building 1456 parking has been used as a gravel parking area. Soils in this area have been compacted from vehicle use and gravel has been added to the surface for stability. This lot is adjacent to Building 1460 and it is likely that the portion closest to the building was disturbed during clearing and grading for that structure. Soils at this site would no longer exhibit the qualities of native soils and would now be considered disturbed.

Treatment Plant Road, the drive to the Salvage Yard, the access roads near the J-6 Complex, and the roads in FamCamp are constructed gravel roads. Soils in the areas proposed for paving no longer exhibit the qualities of native soils and would now be considered disturbed.

The lot at the sandblast facility is subjected to heavy use. Gravel has been added to the surface for stability. Soils at this site would no longer exhibit the qualities of native soils and would now be considered disturbed.

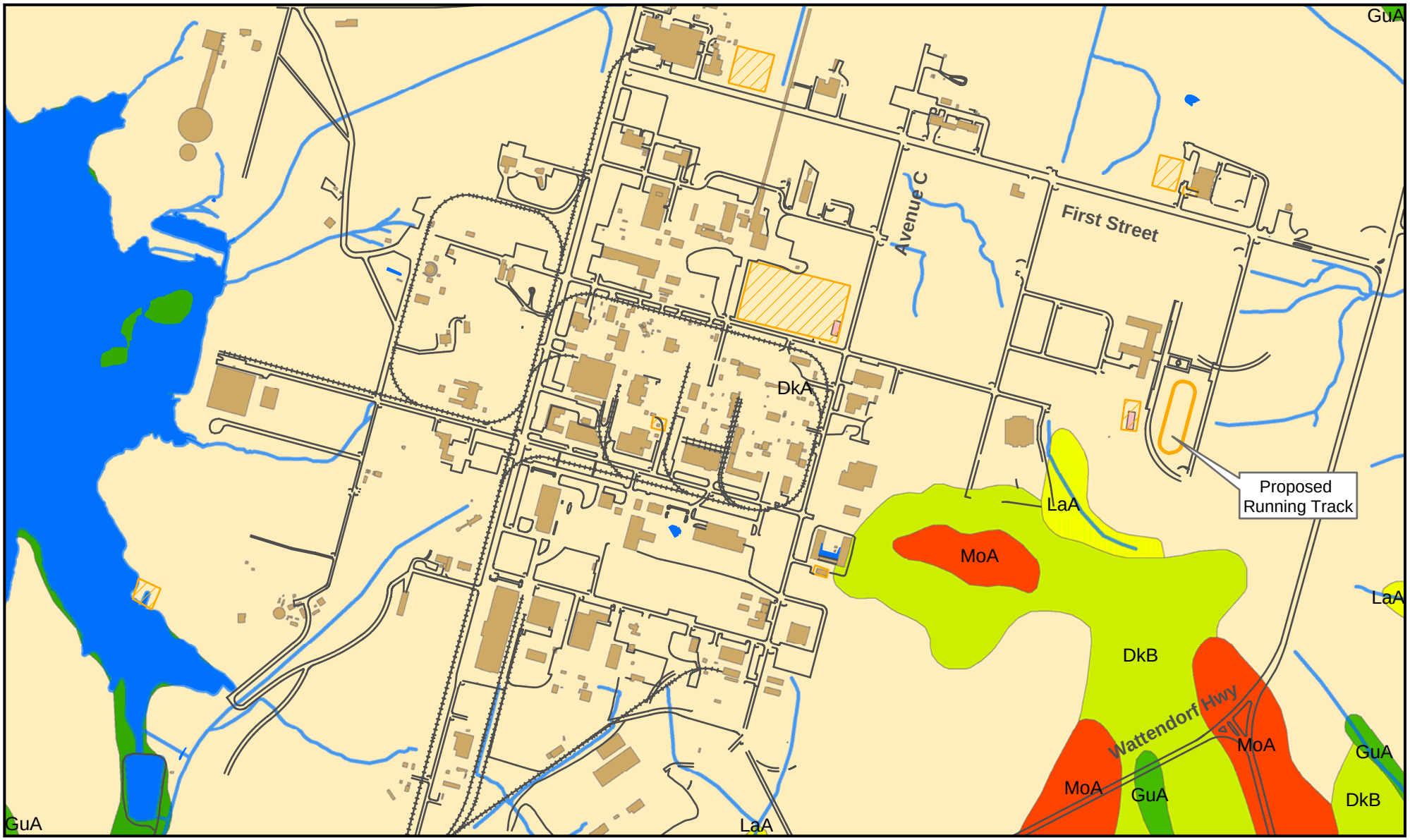
The turning lane proposed at the Gate 2 entrance would be placed within the existing cleared and graded ROW of Wattendorf Highway. All soils in this area were cleared, grubbed, and graded for construction of Wattendorf Highway. Soils at this site would no longer exhibit the qualities of native soils and would now be considered disturbed.

The area proposed for off-street parking for Building 445 is between Building 445 and Building 451. Much of the area is graveled. At this location, soils within the building footprints and the immediate surrounding area were cleared, grubbed, and graded to prepare the sites for construction. Soils would have been compacted and may have had fill material added to support foundations. These soils would no longer exhibit the qualities of native soils and would now be considered disturbed.

The area proposed for a Vehicle Pad at the LN2/GN2 Loading Facility has been used for vehicle parking and for cylinder loading, unloading, and storage. Soils in this area have been compacted from vehicle use and gravel has been added to the surface for stability. Soils at this site would no longer exhibit the qualities of native soils and would now be considered disturbed.

The GLC parking area was cleared, grubbed, and graded when the GLC and its associated parking were constructed. Soils at this site would no longer exhibit the qualities of native soils and would now be considered disturbed.

The site of the Consolidated Civil Engineering Complex (Photo 1, Appendix B) currently contains a mix of hardwoods and pines, and the Proposed Action would involve removing trees and clearing, grubbing, and grading the site for development. Soils associated with



Legend

- Proposed Construction
- Existing Buildings
- Streams

Soil Code

DkA	MoB
DkB	MoC
DkC	MtC
Dka	MtD
GuA	PuA
LaA	Unk
LbA	W
MoA	WaA

N

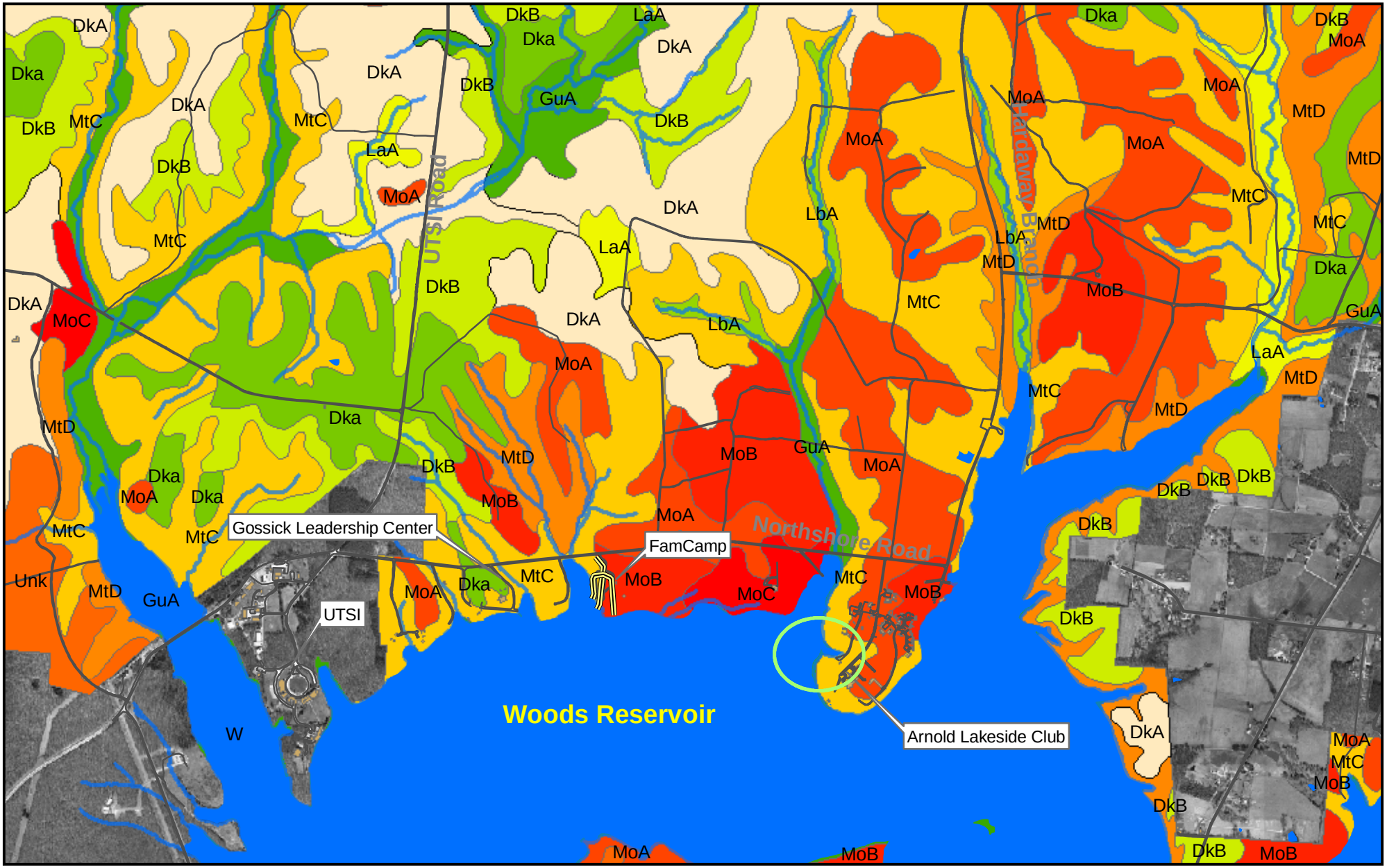
0 1,250 2,500 Feet

Figure 3-2

Proposed Construction, Soils in AEDC Compound

Building, Paving, and General Construction
Final Environmental Assessment

File Path: V:\CONSTRUCTION EA\Figure 3x AEDC soils wetlands.mxd, Date: 07 28, 2005, User: CHORACE



Legend

- Proposed Paving
- Streams

Soil Code

DkA	MoB
DkB	MoC
DkC	MtC
Dka	MtD
GuA	PuA
LaA	Unk
LbA	W
MoA	WaA

N

0 1,250 2,500 Feet

Figure 3-3

Soils Near Arnold Lakeside Club

Building, Paving, and General Construction
Final Environmental Assessment

File Path: V:\CONSTRUCTION EA\Figure 3x AEDC soils wetlands_woods.mxd, Date: 07 28, 2005, User: CHORACE

this site are Dickson silt loam classification, moderately well drained soils. The Dickson soils are classified as fine-silty, siliceous, thermatic Glossic Fragiudults. According to the Natural Resource Conservation Service (NRCS) the proposed State Soil of Tennessee is soils of the Dickson series.

The site of the Consolidated PMEL and Chemistry Laboratory Complex (Photo 2, Appendix B) currently contains a mix of hardwoods and pines, and the Proposed Action would involve removing trees and clearing, grubbing, and grading the site for development. The site currently contains a mix of hardwoods and pines. Soils associated with this site are Dickson silt loam classification, moderately well drained soils. The Dickson soils are classified as fine-silty, siliceous, thermatic Glossic Fragiudults.

The new Fuels Laboratory (Photo 3, Appendix B) would be placed adjacent to Building 870, in an area where a smaller building would be demolished. Soils at the site within the building footprints and the immediate surrounding area were cleared, grubbed, and graded to prepare the site for construction of the buildings. Soils would have been compacted and may have had fill material added to support foundations. These soils would no longer exhibit the qualities of native soils and would now be considered disturbed.

The new BX Annex (Photo 4, Appendix B) would be placed on an existing paved lot.

The proposed storage building (Photo 5, Appendix B) near the ASTF cooling tower would be placed on the site of an existing building. Soils at the site were cleared, grubbed, and graded to prepare the sites for construction. Soils would have been compacted and may have had fill material added to support foundations. These soils would no longer exhibit the qualities of native soils and would now be considered disturbed.

The site proposed for the new Fitness Center (Photo 6, Appendix B) was formerly the site of Building 1100, which has been demolished. The site currently has a mix of trees and open grassed areas. When Building 1100 was constructed, soils within the building footprint and the immediate surrounding area were cleared, grubbed, and graded to prepare the site for construction. Soils would have been compacted and may have had fill material added to support the foundation. Additional soil disturbance occurred during demolition of the building. These soils would no longer exhibit the qualities of native soils and would now be considered disturbed.

The site for the proposed running track and warm-up area (Photo 7, Appendix B) southeast of Building 100 is within the circle of Kindel Drive. The site is a mix of trees and open grassed area. Soils at the site would be cleared, grubbed, and graded to prepare for construction of Building 100 and Kindel Drive. Soils would have been compacted and may have had fill material added to support foundations. These soils would no longer exhibit the qualities of native soils and would now be considered disturbed.

The installation of a permanent oil/water separator (Photo 8, Appendix B) and associated support infrastructure at the Skimming Lagoon would involve removing trees and clearing, grubbing, and grading the site for development. Soils associated with this site are Dickson silt loam classification, moderately well drained soils. The Dickson soils are classified as fine-silty, siliceous, thermatic Glossic Fragiudults.

Installation of a chain-link fence to separate the Industrial Complex from the community support area would involve soil boring for the fence posts. Soils associated with this site are Dickson silt loam classification, moderately well drained soils. The Dickson soils are classified as fine-silty, siliceous, thermatic Glossic Fragiudults. The Conference Center Administration Building at the ALC would be placed in an area that was cleared, grubbed, and graded to prepare the site for construction. Soils would have been compacted and may have had fill material added to support foundations. These soils would no longer exhibit the qualities of native soils and would now be considered disturbed.

The relocation of the Marina/Dock from Arnold Village to the GLC area and construction of a marina Maintenance Building near the relocated dock would involve removal of pilings that supported the marina and dock. Areas for the Maintenance Building would be cleared, grubbed, and graded to prepare the site for construction. Soils associated with this site include Mountview silt loam (MtC) and Mimosa, Baxter, and Colbert (MoB).

Increases in impervious area would result in an increase in stormwater runoff. However, use of construction and post-construction stormwater BMPs for the project would manage any increase in stormwater runoff and prevent other than minor impacts to hydrology.

3.3 Hydrology

Hydrologic features include surface waters (lakes, rivers, streams, and springs) and groundwater. Arnold AFB lies within the Duck River and the Elk River basins. The drainage divide between these two watersheds extends southwest to northeast through the AEDC Industrial Complex. The Duck River basin lies to the north of the divide and receives drainage from Hunt, Huckleberry, Wiley, Crumpton, and Bobo Creeks and the Hickerson Spring Branch. The Elk River basin is to the south of the divide and collects surface drainage, primarily from Bradley, Brumalow, and Rowland Creeks. Smaller creeks such as Dry Creek, Hardaway Branch, Saltwell Hollow Creek, Spring Creek, and Poorhouse Creek also contribute to the Elk River (Call, 2003). Streams in the proposed project areas are shown on Figures 3-4 and 3-5.

Regional groundwater resources include the Mississippi Carbonate (karst) aquifer (recently named Highland Rim aquifer). This aquifer consists of flat-lying carbonate rocks of Mississippian age and underlies the Highland Rim physiographic province. Well yields commonly range from 5 to 50 gpm (TDEC, 2002a).

Karst areas are characterized by sinkholes, springs, disappearing streams and caves, and by rapid, highly directional groundwater flow in discrete channels. Since water can travel rapidly over long distances through conduits that lack natural filtering processes of soil and bacteria, karst systems are easily contaminated.

Floodplains have been defined at several locations on Arnold AFB. These areas are located near Sinking Pond and the inlet to Woods Reservoir at considerable distance from the proposed activities.

The headwaters of several streams have been ditched and extended into the AEDC Industrial Complex to receive discharge water from testing facilities. Rowland Creek has been ditched to extend across the natural drainage divide into AEDC. The Retention

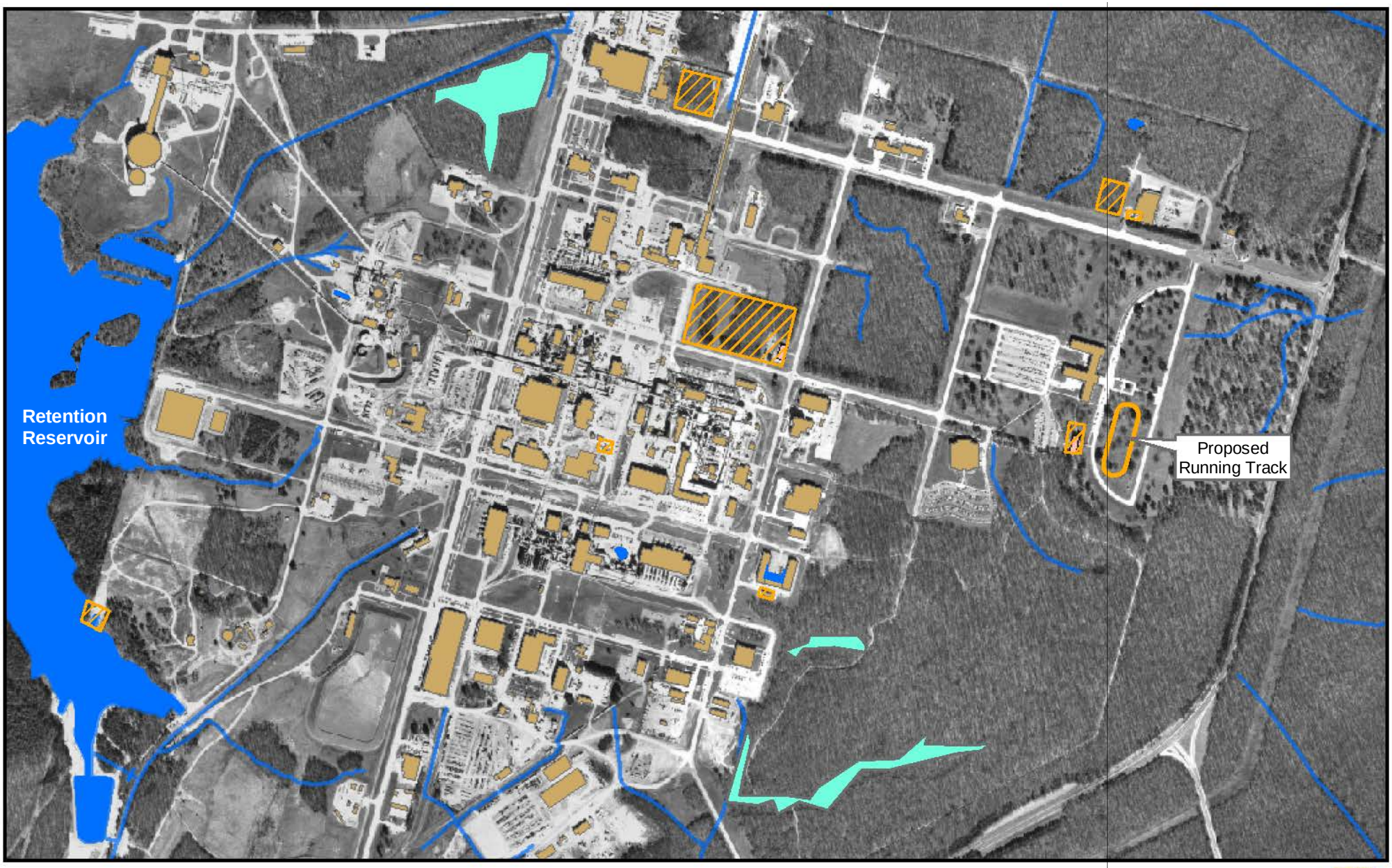


Figure 3-4

Proposed General Construction, Wetlands and Streams in AEDC Compound

Building, Paving, and General Construction

Final Environmental Assessment

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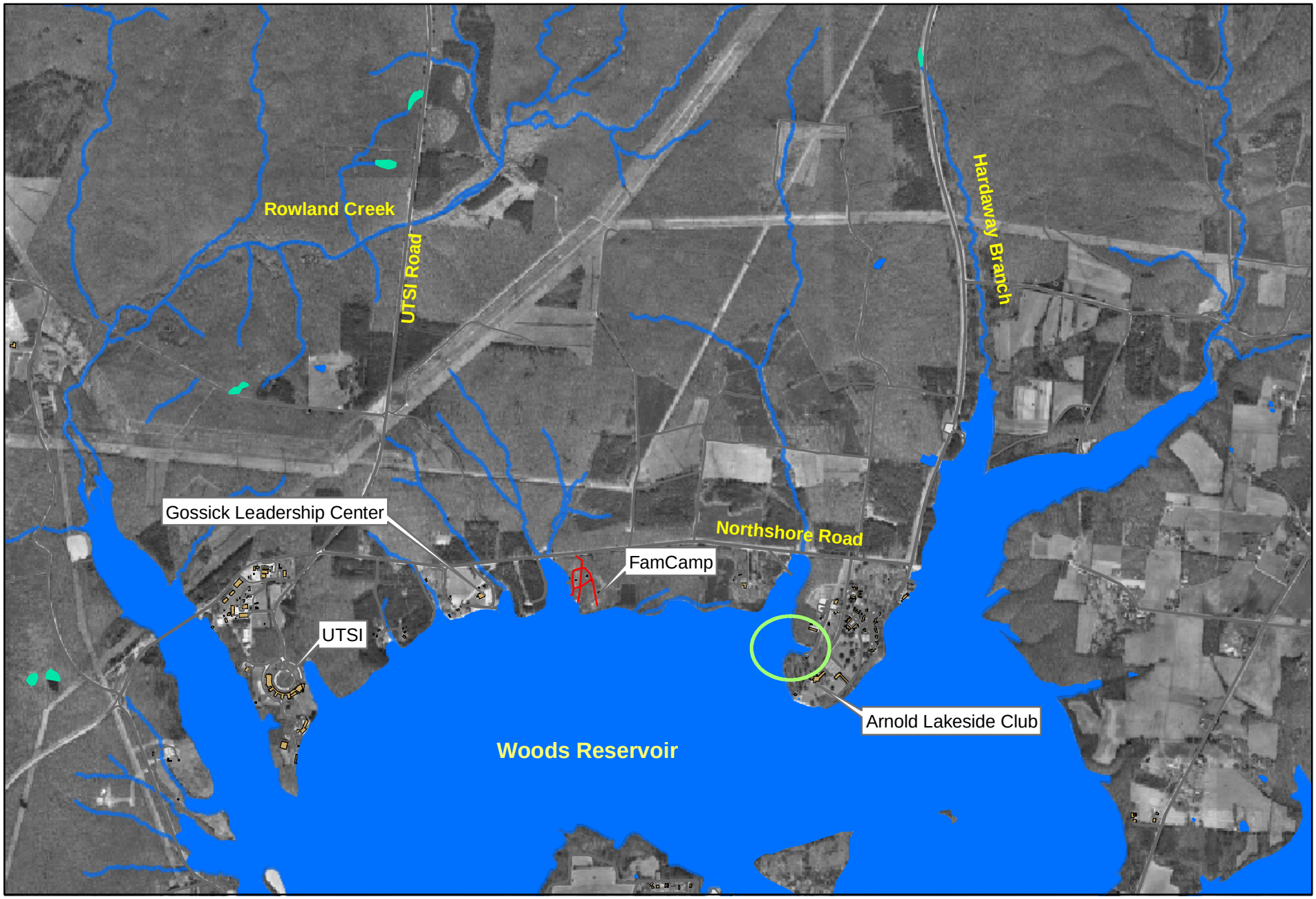


Legend

- Proposed Paving
- Wetlands
- Existing Buildings
- Existing Marina
- Streams
- Reservoir

N

0 800 1,600 3,200 Feet

Figure 3-5

Wetlands and Streams Near FamCamp

Building, Paving, and General Construction

Final Environmental Assessment

File Path: W:\Construct_Pave EA 072605\Figure 3-3 famcamp streams wetlands.mxd, Date: 08 26, 2005, User: CHORACE

Reservoir was constructed in the headwaters of a tributary to Crumpton Creek and drains through engineered gates across the natural divide to the ditched part of Rowland Creek (Robinson and Haugh, 2004).

The climate of the EHR varies by season, with generally mild winters and warm summers. Rainfall averages between 50 and 55 inches per year and is heaviest in late winter and early spring. The average yearly temperature is about 60 degrees Fahrenheit (Smith, 2004). Precipitation is somewhat evenly distributed throughout the year, with slightly less in fall and slightly more in winter. August is typically the driest month (3.4 inches of precipitation) and February has the highest average precipitation (6.8 inches).

3.4 Water Quality

Arnold AFB straddles the upper Elk River and the Duck River basins. Within the Duck River basin, there are only two streams that do not fully meet their designated uses. Both the Duck River and the Little Duck River have elevated bacteria levels near the City of Manchester, attributed to failing sewage collection systems within the city and general urban runoff (TDEC, 2002b).

Twelve water bodies in the Upper Elk basin are included on the final version of the 2002 Section 303(d) list, which was issued in January 2004 (U.S. Environmental Protection Agency [USEPA], 2004). Woods Reservoir, located in the project area, is listed as not supporting its designated uses because of polychlorinated biphenyl (PCB) impairment of sediments resulting from historical PCB releases from AEDC into Woods Reservoir. A No Consumption-General Public (NCGP) fishing advisory has been issued for catfish (TDEC, 2002b).

Most of the projects considered in this EA would occur in areas that drain to the Retention Reservoir through the stormwater collection system. However, the projects adjacent to Woods Reservoir would drain directly into the reservoir. The more southern projects in the AEDC area and the Wattendorf Highway project would drain into Brumalow Creek or Rowland Creek drainages without passing through the Retention Reservoir. The more eastern projects would drain into headwater drainages of Bradley Creek.

3.5 Biological Resources

Biological resources include the native and introduced terrestrial plants and animals around Arnold AFB. The land areas at Arnold are home to unusually diverse biological resources including several sensitive species, habitats, and wetlands. Arnold AFB developed a system of ecological associations based on floral, faunal, and geophysical characteristics. These ecological associations are described in the Arnold AFB Integrated Ecosystem Management Plan (Call, 2003). A comprehensive review of the important species has been presented in prior EAs (CH2M HILL, 2004a and 2004b). Therefore, only summary information is provided below.

3.5.1 Eastern Highland Rim Ecological Association

The EHR region is part of the Mississippian Plateau section of the Western Mesophytic Forest region, supporting a mixed oak-tulip-chestnut forest with accessory stands of beech and hemlock. Relic stands of mixed hardwood-white pine occur on some bluffs above streams. The Barrens of the EHR is linked to the karst topography and was once an area of tallgrass prairies.

3.5.2 Wildlife Species

Wildlife species at Arnold AFB are those common to the central southeastern United States. A literature review was conducted and resulted in identification of 42 mammals (including 7 species of bats), 35 reptiles, and 26 amphibians and 83 species of fish found on Arnold AFB (Mammal species from Lamb 2004a, Mullen et al., 1995; Bailey et al. 2003; J.W. Lamb personal communication, 2004. Amphibian species from Mullen et al., 1995; J.W. Lamb personal communication, 2004. Reptile species from Mullen et al., 1995; Bailey et al. 2003; J.W. Lamb personal communication, 2004. Fish species from J.W. Lamb, personal communication, 2004). In addition, AEDC Conservation staff have identified 226 species of birds (includes summer residents, migrants, and wintering species) on Arnold AFB (J.W. Lamb, unpublished data).

Land use in the areas proposed for projects is described in Section 3.1. Most of the areas have been previously disturbed and do not support wildlife species. Proposed projects that could impact wildlife species are those that would occur in areas that are forested. These include:

- Construction of a consolidated Civil Engineering Complex (Photo 1, Appendix B)
- Construction of a new PMEL Laboratory (Photo 2, Appendix B)
- Construction of a permanent oil/water separator (Photo 8, Appendix B) and associated support infrastructure at the Skimming Lagoon
- Construction of an additional security fence

3.5.3 Plant Species

The plant species found at Arnold AFB are those common to the EHR ecological association. Oak-hickory forest, cedar glades, and a mosaic of bluestem prairie and oak-hickory forest dominate this association. The predominant vegetation form is temperate low land and submontane broad-leaved cold-deciduous forest. Oaks (*Quercus* spp.) are the dominant canopy species. Hickories (*Carya* spp.), including pignut (*C. glabra*), mockernut (*C. tomentosa*), shagbark (*C. ovata*), and bitternut (*C. cordiformis*), form a common but minor component (McNab and Avers, 1994).

Numerous wetlands occur across the Base, with prevailing vegetation ranging from grassland to closed-canopy forest. Several hundred acres of open, prairie-like Barrens occur primarily near the airfield and along powerline and railroad ROWs. The Nature Conservancy and the Tennessee Division of Natural Heritage classified and mapped 33 plant associations on Arnold AFB. Seventeen of the 33 associations are considered "imperiled" community types.

Vegetated portions of the AEDC are composed primarily of landscaped plants and grasses with some areas of mixed hardwoods. An understory is generally absent due to browsing from deer.

The area proposed for work in and near the FamCamp is managed for production of pine pulpwood/sawtimber. This area is a mix of recently clear-cut/early successional open field areas with stumps and root masses of the harvested trees remaining in place and mixed hardwood forests comprised primarily of mid-growth oaks.

Only those projects that are located in forested areas could impact natural vegetation. Other projects could impact maintained vegetation in improved or semi-improved areas, but this would not constitute an environmental impact. Projects that could impact natural vegetation include:

- Construction of a consolidated Civil Engineering Complex (Photo 1, Appendix B)
- Construction of a new PMEL Laboratory (Photo 2, Appendix B)
- Construction of a permanent oil/water separator (Photo 8, Appendix B) and associated support infrastructure at the Skimming Lagoon
- Construction of an additional security fence

3.5.4 Sensitive Species

Sensitive species include those with federal endangered or threatened status, species proposed for listing as federal threatened or endangered, and state endangered, threatened, and species of special concern status. An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is any species that is likely to become endangered in the future throughout all or a significant portion of its range due to loss of habitat, anthropogenic effects, or other causes.

Four federally listed species are known to occur or have the potential to occur on Arnold AFB (Table 3-1). AF projects that could affect federally protected species and species proposed for federal listing are subject to the ESA. One element of the ESA, as identified in Section 4(a)(3)(A), is the designation of critical habitat. However, no areas on Arnold AFB are designated as critical habitat under the ESA. The species present on Arnold AFB that are protected under the ESA are summarized below.

TABLE 3-1
Sensitive Species Occurring on Arnold AFB
Building, Paving, and General Construction Final EA

Species	Federal Status
Gray bat (*Myotis grisescens*)	Endangered
Indiana bat (*M. sodalis*)	Endangered
Bald Eagle (*Haliaeetus leucocephalus*)	Threatened
Eggert's sunflower (*Helianthus eggertii*)	Threatened

3.5.4.1 Gray Bat

A gray bat colony resides on Arnold AFB at Woods Reservoir Dam and is listed as a Priority 2 maternity colony in the U.S. Fish and Wildlife Service (USFWS) Gray Bat Recovery Plan (USFWS, 1982). This is one of very few maternity colonies that have been identified as using manmade structures for a maternity roost (Lamb, 2003).

Gray bats forage primarily on aquatic insects along forested riparian corridors and use other forested corridors as travel routes. The canopy provides protective cover from potential predators (Rommé and Reaves, 1999; Lamb, 2003). Mist net surveys at Arnold AFB have confirmed this life history characteristic, and gray bats have been captured while foraging along Elk River Bottoms, Bradley Creek, Brumalow Creek, and Rowland Creek. Juvenile bats typically forage in wooded areas around the maternity cave (Rommé and Reaves, 1999; Lamb, 2003). Therefore, protection of these areas is important to recovery and maintenance of the species. Documented observations of the gray bat on Arnold AFB are provided on Figure 3-6.

3.5.4.2 Indiana Bat

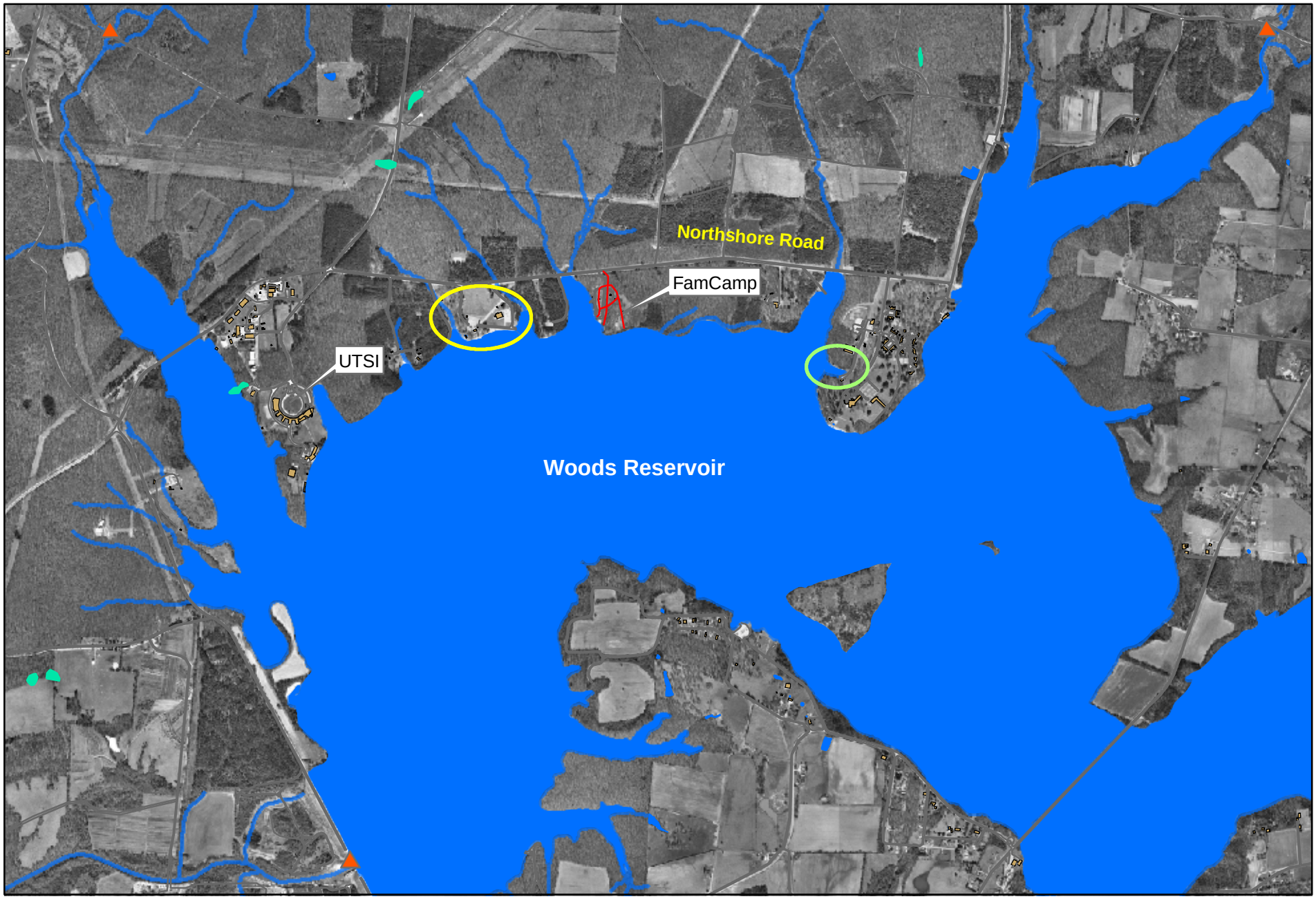
Indiana bats hibernate in caves and typically spend summers under the loose bark of trees in upland and bottomland forests and semi-wooded areas (Whitaker and Hamilton, 1998). Typically, Indiana bats make summer roost in hardwood trees with sloughing bark or cavities (Rommé and Reaves, 1999). Indiana bats forage on insects in a variety of habitats. This species typically forages in and around the tree canopy of riparian, floodplain, and upland forests. They also may forage along fencerows, crops, clearings, and farm ponds (Rommé and Reaves, 1999).

AnaBat II™ surveys in 2003 identified the possible presence of Indiana bats along Bradley and Brumalow Creeks, but the species has never been captured in mist nets on the Base (Lamb, 2004). There is some difficulty in positively identifying Indiana bats from calls recorded with an AnaBat II™ detector because of similarity and marginal overlap with other bat species. The USFWS does not currently accept AnaBat II™ identifications in the absence of confirmed captures (Robert Currie, USFWS, communication, 2004 to J.W. Lamb cited in Lamb, 2004). Additional surveys would be required to confirm the presence of this species on the Base.

3.5.4.3 Bald Eagle

There are an estimated 50,000 bald eagles in the United States, with 80 percent found in Alaska (Murphy et al., 1989). Tennessee's bald eagle population is the highest in winter when birds migrate from the north. Most of the birds winter in western parts of the state, particularly at Reelfoot Lake and at Dale Hollow Reservoir. However, bald eagles may occur on almost any waterway in the state (Tennessee Wildlife Resources Agency [TWRA], 2004). In the Southeast, bald eagles build their nests in early September. To date, no bald eagles have been documented nesting at Woods Reservoir.

Bald eagles have been observed at Woods Reservoir every year since 1989. Typically, two adults and in a few rare instances, a juvenile were observed.



Legend

- Gray Bat Occurences
- Proposed Paving
- Streams
- Buildings
- Existing Marina
- Gossick Leadership Center
- Reservoir

N

0 750 1,500 3,000 Feet

Figure 3-6

Sensitive Species near FamCamp/Gossick Leadership Center

Building, Paving, and General Construction

Final Environmental Assessment

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3.5.4.4 Eggert's Sunflower

Eggert's sunflower is the only federally listed threatened plant species known from Arnold AFB. Management actions for the species are integrated with other aspects of the Arnold AFB ecosystem management program.

All aspects of Eggert's sunflower management on Arnold AFB are planned in coordination with the Cookeville, Tennessee, office of the USFWS. The agency's recommendations are incorporated when developing new management strategies and projects or addressing unforeseen operational impacts (Fitch, 2003).

Eggert's sunflower can be found in the developable areas in the northwest corner of the map shown on Figure 3-1.

3.5.5 Wetland Habitats

Wetlands are inundated (water-covered) areas, or areas where water is present either at or near the surface of the soil for distinguishable periods throughout the year.

Wetland flats and depressions are the two primary wetland types on Arnold AFB. The USFWS completed a wetlands inventory and mapping project on Arnold AFB in 1998 and documented 1,894 acres of wetlands in 220 sites. Two-hundred wetlands on Arnold AFB totaling about 1,775 acres are classified as either flats or depressions. Figures 3-4 and 3-5 show wetlands located near proposed construction activities. The nature of the wetlands and the associated conservation targets have been discussed in prior EAs (CH2M HILL, 2004a and 2004b). The developable parcels discussed earlier (Figure 3-1) were selected to avoid impacts to wetlands located on Arnold AFB.

3.6 Safety and Occupational Health

The Air Force Safety Center develops AFOSH standards. These standards implement Occupational Safety and Health Administration (OSHA) rules directed by Department of Defense Instruction (DoDI) 6055.1 and AFI 91-302. The Center also develops other guidance to supplement the AFOSH standards and ensure their availability at the supervisor and worker level. The goal is to ensure that guidance is in compliance with OSHA and other federal standards and incorporates "lessons learned" and appropriate parts of consensus standards to provide the supervisor and worker with the tools to prevent mishaps. Their function is to serve as a focal point for Environmental, Safety, and Occupational Health compliance, produce guidance, evaluate compliance, provide technical expertise in a wide range of subjects, coordinate with other agencies and private entities in and outside of the federal sector, and perform engineering reviews of procedures and facility design projects (U.S. Air Force [USAF], 2004).

The Environmental, Safety, Health, and Quality (ESHQ) team is responsible for environmental and occupational safety at Arnold AFB. The ESHQ team ensures that workers are informed about potential hazards from chemicals and materials that may be encountered on the Base and ensures that work areas have proper lighting and ventilation for tasks to be performed. Additional components include ongoing program evaluations for

noise, ergonomics, hazard communication, personal protective equipment including respiratory protection, and emergency response.

3.7 Noise

Noise, in the context of this analysis, refers to sounds generated by activities that could affect employees of the Base, on-Base residents, residents of off-Base areas, or wildlife. Noise levels typically are expressed in terms of decibels (dB), a measure of the sound pressure generated. The decibel scale is logarithmic rather than linear because humans perceive sound as the logarithm of the sound pressure rather than the actual sound pressure (Danish Wind Industry Association, 2004).

For determination of impacts to human receptors, noise measurements are weighted to increase the contribution of noises within the normal range of human hearing and decrease the contribution of noises outside the normal range of human hearing. For humans, this is considered an A-weighted scale (dB_a). When sound pressure doubles, the dB_a level increases by three. Psychologically, most humans perceive a doubling of sound as an increase of 10 dB_a (Danish Wind Industry Association, 2004). Sound pressure decreases with distance from the source. Typically, the amount of noise is halved as the distance from the source doubles (Danish Wind Industry Association, 2004).

Additionally, people tend to exhibit differing sensitivity to noises generated by time of day, with noise at night being more disturbing than daytime noise. Therefore, a Day-Night Average Noise Level (LDN) is used to determine whether noise would be perceived as an adverse impact. EPA developed an index as a standard descriptor for noise impacts from a variety of sources. Where LDN values exceed 65 dB_a, residential development is not recommended.

Noise levels within the AEDC Industrial Complex are highly variable, depending on which test facilities are operating and the types of tests being conducted. Individual tests generate noise levels ranging from 55 to 122 dB_a. Absent testing, background noise levels would be expected to be in the range that is typical of urban residential areas: from 58 dB_a to 72 dB_a (U.S. Army Corps of Engineers [USACE], 1998).

Noise levels in suburban neighborhoods are typically around 50 dB_a to 60 dB_a (dB Engineering, 2004). A quiet office or rural home typically has a noise level of approximately 40 dB_a (League for the Hard of Hearing, 2004). While no specific data have been compiled for FamCamp, the GLC, and the ALC, background noise levels in these areas would be expected to range from 40 dB_a to 60 dB_a, with occasional upward spikes related to traffic.

3.8 Air Quality

Arnold AFB is located in the Tennessee Valley-Cumberland Mountains Interstate Air Quality Region, which occupies portions of Alabama and Tennessee. Although activities at Arnold AFB result in various sources and volumes of air emissions, the regional air quality is good. Arnold AFB is located in an attainment zone for all pollutants (CH2M HILL, 2002). Air pollutants are emitted from mobile and stationary sources and general maintenance activities, government and privately owned vehicles, jet engine testing, aircraft operations, prescribed burning, wildfires, and mission test and training operations (USAF, 2000). The Tennessee Air

Pollution Control Board of the TDEC issued AEDC a Title V Operating Permit in May 2002. There are currently 26 emission sources covered under this permit, and all are in compliance.

Since Arnold AFB is within an attainment area for all criteria pollutants, major new or modified stationary sources on and in the area of Arnold AFB are subject to Prevention of Significant Deterioration (PSD) review to ensure that these sources are constructed without causing significant deterioration of regional air quality. A major new source is defined as one that has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specific major source thresholds: 100 or 250 tons/year based on the source's industrial category.

3.9 IRP and Hazardous Materials

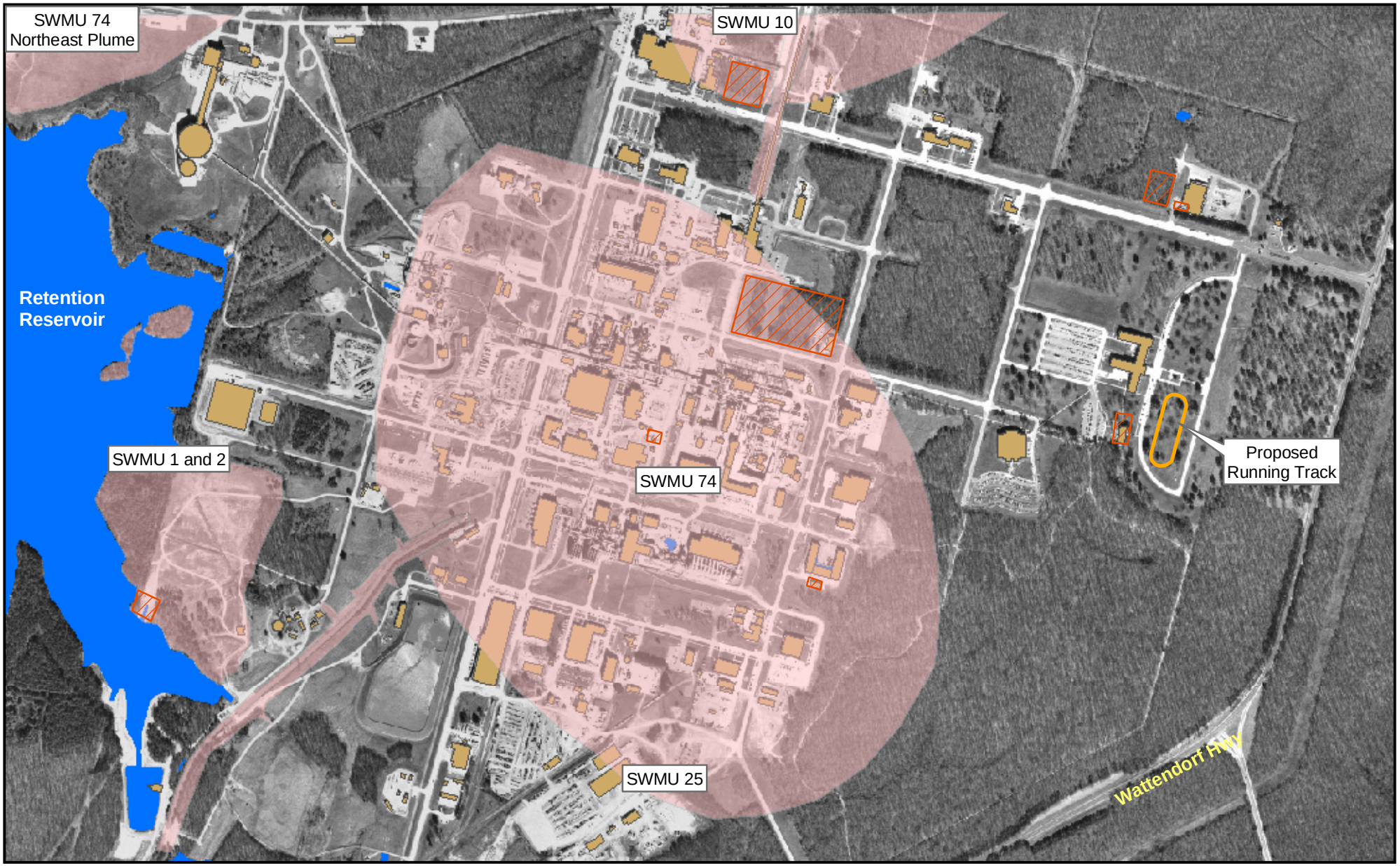
Arnold AFB has an active IRP designed to protect human health and the environment and to restore areas for future use. Arnold AFB executes the IRP in consultation with TDEC in accordance with CERCLA and RCRA. Twenty-six IRP sites have been identified on Arnold AFB, 11 of which have been closed after determinations of no further action required. Arnold AFB over the past 5 years has generated 76,600 pounds of hazardous waste. Wastes are typically generated from painting and paint removal activities, cleaning operations, chemical laboratory analytical work, environmental leaks, IRP activities, and unused hazardous materials. IRP areas near proposed construction activities are shown in Figure 3-7.

Solid Waste Management Unit (SWMU) 74 encompasses a portion of the Main Test Area and is identified as "Undifferentiated Groundwater Contamination" because the contamination has originated from more than one source. SWMU 74 includes the contaminated groundwater plume in the Main Test Area (MTA), and in areas downgradient of the MTA and SMWUs 1 and 2, referred to as the Northwest Plume. The main contaminants found in SWMU 74 are chlorinated volatile organic compounds (CVOCs). Areas that are near the proposed construction site include the proposed Fuels Laboratory, the proposed CE Complex, and the proposed Bromine Trailer Storage Building. This SWMU also contains a number of smaller SWMUs within its boundary. Some of these smaller SWMUs were identified as warranting No Further Action in the HSWA permit and some are involved in Corrective Measures Studies (CMS).

Known source areas in the MTA include the following:

- SWMU 44
- SWMU 49
- SWMU 59
- SWMU 100 (Aeropropulsion System Test Facility [ASTF])
- SWMU 101 (Engine Test Facility [ETF]), including Operational Fuel Farm Area

Additionally, SWMU 62 may have contributed some contamination to MTA groundwater in the past. SWMUs 44, 49, 59 and 62 are described in more detail in RCRA Facility Investigation (RFI) No. 3 (CH2M HILL, 2002). SWMU 100 has been addressed in a separate RFI report (CH2M HILL, 2004c), and the RFI for SWMU 101 is in progress. Remediation of the soil source areas of these plumes will be evaluated in the CMSs for these respective SWMUs.



Legend

- Proposed Construction
- Existing Buildings
- IRP Sites
- Reservoirs

N

0 1,250 2,500 Feet

Figure 3-7
IRP Sites near Proposed Construction in AEDC Compound
Building, Paving, and General Construction
Final Environmental Assessment

The primary source of the Northwest Plume is believed to be past releases of VOCs from SWMUs 1 and 2. SWMU 1 is the former Landfill No.2, and SWMU 2 is the former Leach Pit No.2. Both SWMUs are located southwest of the MTA, adjacent to the Retention Reservoir. The Northwest Plume extends from SWMUs 1 and 2 to a series of discharge springs near Rutledge Falls located 5.4 miles to the northwest of the SWMUs. SWMUs 1 and 2 have been investigated in a separate RFI (CH2M HILL, 2004c), and a CMS for these SWMUs is in progress.

SWMU 10 is located north of and adjacent to the proposed PMEL/Chemistry Lab. A former leach pit behind the model shop contains soil and groundwater contaminated with chlorinated solvents. The site is in the RFI stage, although corrective action is being planned for next year.

The IRP area adjacent to the Retention Reservoir and near the proposed Skimming Lagoon separator contains SWMU 1 and 2, a former landfill and leach pit containing chlorinated solvents. An RFI was recently completed and the report is currently under review. The landfill has been capped and contains a groundwater extraction and treatment unit to remove chlorinated solvents. This site is the source of groundwater contamination known as the northwest plume.

Hazardous wastes typically stored at AEDC are listed according to the characteristic waste type, hazard classification, and associated EPA number. The major waste classifications are:

Ignitable Waste: Wastes classified as ignitable are generated from several sources including machine shops, laboratory operations, testing activities, and associated maintenance and support operations. Ignitable waste on hand can include, but is not limited to a variety of organic solvents, aliphatic and aromatic hydrocarbons, ketones, ethers, and alcohols.

Toxic Waste: The toxic wastes include predominantly toxicity characteristic metals and some U-list organics (Rule 1200-1-11-.20). Although other listed materials (both U and P list) are occasionally generated in small lab-pack quantities, the table in the regulation lists major classes of toxics generally found in AEDC waste streams.

Corrosive Waste: Both acids (pH $\leq$2) and bases (pH $\geq$12.5) are generated periodically at AEDC. Both are classified under EPA number D002 for the characteristic of corrosivity.

Reactive Waste: The reactive wastes are typically materials that have received this designation due to their potential to generate toxic vapors.

Chemical waste designated as hazardous waste is transported to the Hazardous Waste Storage Area to await disposition. Information required for storage is readily obtained from manufacturers' specifications, Base supply and logistics, laboratory services, and recognized reference sources. Materials that fall into the general classification of solvents make up a large percentage of the total hazardous waste generated at AEDC.

3.10 Cultural Resources

Section 106 of the NHPA requires that federal agencies analyze the impacts of federal activities on historic properties. Areas potentially impacted by mission activities are surveyed as part of the AF Cultural Resources Management Program.

Surveys conducted on Arnold AFB have identified 107 prehistoric and historic sites dating back to Early Archaic times (Hajic et al., 2002). These include 40 prehistoric sites, 55 historic sites, and 12 mixed prehistoric and historic sites. Of these 107 sites, 6 have been deemed eligible for listing on the NRHP and 40 are considered potentially eligible (R. Alvey, personal communication, 2004). The prehistoric sites include open habitations, isolated projectile points/knives, and a midden mound. The historic sites include the remains of houses, outbuildings, wells, cemeteries, and trash dumps (Call, 2003). The developable parcels identified in Figure 3-1 were screened for the presence of cultural resources. Only the running track would be sited in an area not previously screened for cultural resources. This area is currently being reviewed as part of a Phase I survey that is being conducted for 1,500 acres Base-wide. Approximately 27 acres within the Industrial Complex, including the proposed running track site, are being surveyed as part of this effort.

3.11 Traffic Flow and Utility Infrastructure

3.11.1 Roads and Parking

The Base road network consists of approximately 105 miles of improved roads—50 percent gravel and 50 percent asphalt and concrete. There are 42.35 acres of parking lots comprising more than 5,000 parking spaces. About 70 percent of the lots are asphalt, 25 percent are stone, and 5 percent are concrete (AEDC, 2004). Within the AEDC Industrial Complex, existing roads are sufficient to accommodate traffic flow of the workforce and delivery of materials and supplies. The Main Gate and Gate No. 2 are open to allow ingress and egress of traffic.

3.11.1.1 Utilities

Utility infrastructure on Arnold AFB includes the electric transmission lines and associated ROWs, water and sewer systems, aboveground and belowground steam and gas lines, and the water treatment plant.

3.11.1.2 Water Supply System

The water distribution system is a 13-mile grid of 6- to 12-inch mains that supplies the AEDC property. Other areas of the Base, including the FamCamp, Arnold Village family housing area, the visiting officers' quarters, ALC, the Girl Scout Camp, and the AEDC recreation area are supplied by the Estill Springs Utility District. Other outlying areas are supplied by groundwater wells (AEDC, 2004).

3.11.1.3 Cooling Water System

A recirculating water system provides cooling water for Base operations in the AEDC area via 17.5 miles of supply and return mains, a cooling tower, and water pumps (AEDC, 2004).

3.11.1.4 Sanitary Sewer System

The wastewater collection system for the AEDC area consists of 9 miles of gravity flow and forced sewer lines, 28 lift stations, and the AEDC sewage treatment plant. A package sewage treatment plant serves Arnold Village Family Housing, the Visiting Officers' Quarters, and ALC and beach. Septic tank systems serve all other areas of the Base including the

FamCamp, J-6 Steam Plant, Rocket Prep Area, X-Ray Building, Airfield Operations Building, and Gate 1 (AEDC, 2004)

3.11.1.5 Stormwater Drainage System

The AEDC stormwater collection system consists of curbs, gutters, underground storm mains, and open ditches. The system consists of 150 sump pumps, 20 miles of underground mains, and 19 miles of open ditches and conveys water to Rowland, Bradley, and Brumalow Creeks (AEDC, 2004).

3.11.1.6 Natural Gas System

Natural gas is supplied to AEDC from the Elk River Public Utilities District.

3.11.1.7 Electrical Distribution System

Electricity is supplied from the Tennessee Valley Authority (TVA). Four 161-kilovolt (kV) lines and two 500-kV lines supply Arnold AFB property. Two 161-kV lines feed the AEDC's main substation. Underground 161-kV lines feed eight distributing substations. Underground and overhead 6.9-kV to 13.8-kV overhead lines supply power to most of AEDC's buildings (AEDC, 2004).

3.11.1.8 Steam System

Steam is provided by two central plants and distributed via 16 miles of piping. The distribution system includes shallow-trench, aboveground, and buried piping (AEDC, 2004).

3.12 Socioeconomic Factors

The socioeconomic factors considered in this EA are employment and recreation.

3.12.1 Employment

In 2003, AEDC employed 2,789 people directly and 1,928 people via secondary jobs created by the Base. The resulting impact to the regional economy was $536.1 million, including $1.9 million in construction expenditures (AEDC, 2005a).

3.12.2 Recreation

The current Arnold AFB Fitness Center is equipped with a basketball/volleyball court, racquetball courts, exercise machines, free weights, showers, and lockers. The facility offers group exercise programs and team sports programs including softball, basketball, volleyball, flag football, racquetball, bowling, tennis, golf, and darts. A 1.8-mile ParCours fitness trail is located adjacent to the center (AEDC, 2005b). At present, there is no dedicated running track on Arnold AFB.

4.0 Environmental Consequences

4.1 Land Use

4.1.1 Proposed Action

Under the Proposed Action, paving projects would convert approximately 9.74 acres of gravel roads/parking areas and 0.09 acre of unimproved grounds to paved roads and paved parking areas (Table 4-1). Additionally, 0.11 acre of land currently paved would be converted to improved grounds (Table 4-1). Proposed construction projects would convert approximately 0.11 acre of existing improved, 3.14 acres of semi-improved, and 6.12 acres of unimproved grounds into buildings, parking areas, and landscaping.

TABLE 4-1
Summary of Land Use Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Land Use Impact
	Paving Projects
Pave Parking for Hazardous Materials Building	No change to land use. Conversion of 0.11 acre gravel lot to pavement.
Pave Treatment Plant Road	No change to land use. Conversion of 0.83 acre of gravel road to pavement.
Pave Drive to Salvage Yard	No change to land use. Conversion of 0.17 acre of gravel area to paved parking.
Pave Lot at Sandblast Facility	No change to land use. Conversion of 3.44 acres of gravel lot to paved parking area.
Construct Turning Lane at Gate 2 Entrance	No change to land use. Conversion of 0.33 acre of semi-improved grounds (road shoulder) to paved road.
Pave Road in FamCamp	No change to land use. Conversion of 0.60 acre of gravel roads to paved roads.
Construct Parking for Building 445	Conversion of 0.09 acre of un-improved grounds and gravel lot to paved parking area. This would not constitute a change land use designation as this area already is designated as industrial use.
Pave Access Roads and Parking near J-6 Complex	No change to land use. Conversion of 4.25 acres of gravel roads and parking areas to paved roads and parking areas.
Construct Vehicle Pad at LN2/GN2 Loading Facility	No change to land use. Conversion of 0.01 acre of gravel lot to concrete lot.
Modify GLC Parking	Minor disturbance to 0.11 acre as pavement converted to improved grounds (lawn).

TABLE 4-1
Summary of Land Use Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Land Use Impact
	Construction Projects
Construct Consolidated Civil Engineering Complex	Conversion of 5.0 acres of un-improved grounds and 1.50 acres of semi-improved grounds to paved parking (2 acres), buildings (2.5 acres), and improved grounds (2 acres) (Photo 1, Appendix B). This would not constitute a changed land use designation as this area already is designated as industrial use.
Construct Consolidated Precision Measurement Equipment Laboratory/ Chemistry Laboratory Complex	Conversion of 0.5 acre semi-improved grounds and 0.92 acre of forested un-improved grounds to paved parking (0.4 acre), buildings (0.62 acre), and improved grounds (0.4 acre) (Photo 2, Appendix B). This would not constitute a changed land use designation as this area already is designated as industrial use.
Construct Fuels Laboratory	Conversion of 0.09 acre of open semi-improved grounds to buildings (Photo 3, Appendix B). This would not constitute a changed land use designation as this area already is designated as industrial use.
Construct Storage Building and Install Equipment at Skimming Lagoon	Conversion of 0.05 acre of un-improved grounds to buildings (Photo 5, Appendix B). Land use designation would change from conservation to industrial.
Construct BX Annex	No change in land use. Replacement of existing un-improved building located on a paved area with similar improved building (Photo 4, Appendix B).
Construct Fitness Center	Conversion of 0.5 acre of semi-improved grounds and 0.1 acre of improved grounds to building (Photo 6, Appendix B). Land use designation would change from administration to recreation.
Construct Running Track and Warm-up Area	Conversion of 0.53 acre of semi-improved grounds to improved grounds (Photo 7, Appendix B). Land use designation would change from administration to recreation.
Construct Bromine Trailer Storage Building	No change in land use. Conversion of 0.02 acre of semi-improved grounds to building. (Photo 5, Appendix B).
Install New Security Fence	Minor disturbance of 0.05 acre of grounds for fence and support poles. Conversion of a small area of un-improved grounds (<0.01 acre) to semi-improved grounds along fence for maintenance purposes. No change in land use designation would result.
Construct Conference Center Administration Building	Minor temporary disturbance of 0.1 acre of improved grounds for construction of building. Conversion of 0.08 acre of improved grounds to building.
Relocate marina and construct Maintenance Building	Minor temporary disturbance to 0.04 acre of improved grounds for construction of building. Conversion of 0.03 acre of improved grounds to building.

The Proposed Action would have a minimal impact on designated land uses on Arnold AFB. Paving projects would result in approximately 9.83 acres of land being paved and 0.11 acre of currently paved land being converted to landscaped improved grounds.

Construction projects would result in 9.37 acres of grounds being converted to building complexes and associated parking and landscaping. Most of the land that would be impacted is currently classified for industrial use or transportation. While the land cover would be altered, the intended use of the land would not change.

No extra land would be cleared for paving projects. Work along the unpaved roads at AEDC would be confined to the existing roadways. Work along Wattendorf Highway would be confined to the existing roadway without extension of the shoulders. Building construction would use existing gravel lots near proposed work sites as laydown yards, as needed. During construction, heavy equipment would be used to move and compact soils in construction and paving areas. Standard construction BMPs would limit soil erosion and runoff to adjacent land. The improvements to Base operations would be considered beneficial and would be compatible with adjacent land uses.

4.1.2 No-Action Alternative

No impacts to existing land uses would result from the No-Action Alternative.

4.2 Geomorphology

4.2.1 Proposed Action

Disturbance to soils would occur from work on roadbeds, parking lots, and construction sites. During construction, heavy equipment would be used to move and compact soils in construction and paving areas. Construction of new structures and paved areas would require clearing and grading. Disturbed area would be kept to the minimum to complete the work and would be confined to the final site boundaries. Sedimentation and erosion controls would be implemented during construction to minimize erosion of surrounding soils due to soil/ground disturbance. Stormwater runoff resulting from increased impervious surface area also could contribute to limited soil erosion. The existing Base stormwater collection system would accommodate stormwater runoff volume and site-specific measures would minimize transport of soils. The contract for this work would require that the contractor implement measures consistent with the *Tennessee Erosion & Sediment Control Handbook* (TDEC, 2002c) and comply with the Tennessee Water Quality Control Act of 1977.

During construction at individual sites, grading plans would be prepared to identify how sites would be graded, how drainage patterns would be directed, and how runoff velocities would affect receiving waters. The grading plans also would include information regarding when earthwork would start and stop, establish the degree and length of finished slopes, and specify where and how excess material would be disposed or where borrow materials would be obtained if needed. Berms, diversions, and other stormwater practices that require excavation and filling also would be incorporated into the grading plan. The grading plan would be designed with erosion and sediment control and stormwater management goals in mind. Grading crews would be supervised to ensure that the plans are implemented as intended.

Soil disturbance could result in increased erosion potential from loss of ground cover and exposure of bare soils to precipitation and runoff. Potential temporary impacts to water

quality from these factors are discussed in Section 4.4. However, potential impacts would be controlled and avoided through the use of appropriate BMPs and soil stabilization/revegetation techniques following construction. Appropriate BMPs, as identified in the AEDC Stormwater Pollution Prevention Plan, would be selected based on site-specific conditions and could include, but would not be limited to, sediment barriers (silt fence or straw bales), temporary detention basins, grade stabilization with seed and mulch, and geotextile slope stabilization. Because rainfall is distributed fairly evenly throughout the year, as discussed above, no particular time of year would be likely to reduce the erosion potential. Therefore, it is unlikely that timing of construction could be used to offset potential erosion impacts.

The Proposed Action would have minimal impact on geomorphology. Most proposed project sites are on lands previously cleared and graded. All project sites are on level or gently sloping land. Any changes to topography would be minor.

4.2.2 No-Action Alternative

No soil disturbance or impacts on geomorphology would result from the No-Action Alternative.

4.3 Hydrology

Impacts on hydrology could result from land clearing, loss of vegetation, and associated accelerated runoff from impervious surfaces following precipitation events.

4.3.1 Proposed Action

The addition of impermeable surfaces through the construction of new buildings and the conversion from gravel to asphalt roads and lots would result in an increase in stormwater runoff. Effects would vary, depending on the amount of new surface area to be added/constructed. Potential impacts are defined as impacts to the quality and utility of water resources resulting from an increase in stormwater runoff.

The Proposed Action would result in the conversion of approximately 6.39 acres of pervious surfaces to impervious surface from construction projects. Additionally, 0.09 acre of pervious surface would be converted to impervious surface through paving and 9.74 acres of existing unpaved roads and dirt/gravel lots would be paved, converting slightly permeable surfaces to impervious surfaces.

The change from partially pervious to impervious is not as severe as the change from pervious to impervious. During heavy rains, unpaved road surfaces can generate 80 percent runoff compared with 98 percent runoff for asphalt roads and 100 percent runoff from concrete pavement (Ziegler et al., 2000). There would be an increase in runoff following implementation of the Proposed Action, but impacts resulting from the increase would be minimal.

Of the new impervious surface that would be created, 6.6 acres are within the industrial/administrative area where the stormwater collection system would capture the runoff and convey it to the Retention Reservoir.

Additionally, there would be 4.25 acres of new road surface near the J-6 test cell that would drain into the canalized stream channel leading to the Retention Reservoir. These roads would not be heavily used and the runoff would not present a substantial change to the hydrology of the stream, which was channelized to convey stormwater runoff.

Within AEDC, the remaining 4.33 acres of impervious surface would be located within stream drainages that do not lead to the Retention Reservoir. These include the Brumalow Creek, Rowland Creek, and Bradley Creek drainages. Bradley Creek would receive runoff from 0.90 acre of new impervious area. There would be 0.32 acre of new impervious area draining to Brumalow Creek. Rowland Creek would receive runoff from the 3.44 acres that would be paved at the sandblast facility. However, the sandblast facility would include a containment and recovery system to ensure that lead from sandblasted paint would be recovered and disposed of properly rather than reaching Rowland Creek.

Wattendorf Highway would be widened (0.33 acre) within its existing shoulder width to accommodate the turning lane. This would not result in any appreciable increase in impervious area along this road and there would be no noticeable impacts to hydrology. Roadside drainage and existing conveyances would remain in place and would accommodate the runoff.

There would be 0.60 acre of pavement added in the FamCamp. This area is adjacent to Woods Reservoir and increased runoff would not substantially alter the hydrology in the FamCamp.

At the ALC, 0.08 acre of improved grounds would be converted to building.

There would be 0.03 acre of improved grounds replaced with buildings in the GLC area to accommodate the marina and support building. Expansion of parking at the GLC would convert 0.11 acre of pavement to improved grounds.

Construction would occur outside of designated floodplains and would have no impact on floodplain elevations.

The design of buildings, parking lots, and roads under the Proposed Action would include stormwater controls designed to minimize or eliminate the effects of increased runoff. Tennessee requires that NOIs for National Pollutant Discharge Elimination System (NPDES) Stormwater Construction Permits be filed with TDEC for all projects disturbing 1 or more acres. Four projects included under the Proposed Action would require these NOIs (pave lot at the sandblast facility, pave access roads and parking near the J-6 Complex, construct consolidated CE Complex (Photo 1, Appendix B), and construct consolidated PMEL/Chemistry Laboratory Complex) (Photo 2, Appendix B). Land disturbance associated with construction of the security fence would be limited to approximately 0.05 acre, but during construction additional adjacent land would be impacted.

Construction activities would result in soil disturbance and loss of vegetative cover. These activities could result in modified surface water runoff patterns from the site. Increased runoff from an unvegetated site could result in hydrologic impacts, such as channelization and erosion. BMPs and onsite stormwater controls would reduce or eliminate runoff from the site to avoid hydrologic impacts to nearby waters.

4.3.2 No-Action Alternative

Under the No-Action Alternative, no change from existing conditions would occur. Therefore, no impact on hydrology would result from implementation of the No-Action Alternative.

4.4 Water Quality

4.4.1 Proposed Action

Impacts on water quality could result from construction activities that result in soil disturbance and exposed soil, presenting the possibility for the transport of sediment and soil-bound pollutants into streams. Transport could occur downslope or into immediately adjacent waters. The potential water quality impacts are temporary and are limited to the construction footprints. However, long-term positive impacts may result from reduced sediment transport as a result of paving gravel lots and roads.

Most of Arnold AFB is undeveloped, as discussed in Section 4.1. These areas have vegetation that intercepts much of a rainfall event and soils that allow infiltration of substantial amounts of rainfall. Use of appropriate construction stormwater BMPs, as noted in Section 3.2, would contain or treat stormwater to prevent off-site impacts to water quality. Table 4-2 identifies the potential stormwater impacts to water quality associated with each project and the receiving drainage associated with each project.

TABLE 4-2
Summary of Potential Water Quality Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Land Use Impact	Receiving Drainage
	Paving Projects	
Pave Parking for Hazardous Materials Building	Short-term potential runoff from clearing and grading of 0.11 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved parking area.	Drainage leading to Brumalow Creek
Pave Treatment Plant Road	Short-term potential runoff from clearing and grading of 0.83 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved road.	Retention Reservoir
Pave Drive to Salvage Yard	Short-term potential runoff from clearing and grading of 0.17 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved parking area.	Drainage leading to Brumalow Creek
Pave Lot at Sandblast Facility	Short-term potential runoff from clearing and grading of 3.44 acres. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved parking area and containment system.	Drainage leading to Rowland Creek
Construct Turning Lane at Gate 2 Entrance	Short-term potential runoff from clearing and grading of 0.33 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Drainages leading to Rowland Creek and Brumalow Creek

TABLE 4-2
Summary of Potential Water Quality Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Land Use Impact	Receiving Drainage
Pave Road in FamCamp	Short-term potential runoff from clearing and grading of 0.60 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved roads.	Woods Reservoir
Construct Parking for Building 445	Short-term potential runoff from clearing and grading of 0.09 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved parking area.	Retention Reservoir
Pave Access Roads and Parking near J-6 Complex	Short-term potential runoff from clearing and grading of 4.25 acres. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved parking areas and roads.	Retention Reservoir
Construct Vehicle Pad at LN2/GN2 Loading Facility	Short-term potential runoff from clearing and grading of 0.01 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. Long-term reduced sediment transport from paved loading facility.	Retention Reservoir
Modify GLC Parking	Short-term potential runoff from clearing and grading of 0.11 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Woods Reservoir
	Construction Projects	
Construct Consolidated Civil Engineering Complex	Potential runoff from clearing and grading of 6.50 acres (Photo 1, Appendix B). Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Retention Reservoir
Construct Consolidated Precision Measurement Equipment Laboratory/ Chemistry Laboratory Complex	Potential runoff from clearing and grading of 1.42 acres (Photo 2, Appendix B). Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Retention Reservoir
Construct Fuels Laboratory	Potential runoff from clearing and grading of 0.09 acre (Photo 3, Appendix B). Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Retention Reservoir
Construct Storage Building and Install Equipment at Skimming Lagoon	Potential runoff from clearing and grading of 0.05 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Retention Reservoir
Construct BX Annex	Potential runoff from clearing and grading of 0.028 acre to prepare site for new Annex (Photo 4, Appendix B). Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Drainage leading to Bradley Creek
Construct Fitness Center	Potential runoff from clearing and grading of 0.6 acre (Photo 6, Appendix B). Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Drainage leading to Bradley Creek
Construct Running Track and Warm-up Area	Potential runoff from clearing and grading of 0.53 acre (Photo 7, Appendix B). Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Drainage leading to Bradley Creek

TABLE 4-2
Summary of Potential Water Quality Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Land Use Impact	Receiving Drainage
Construct Bromine Trailer Storage Building	Potential runoff from clearing and grading of 0.02 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts. (Photo 5, Appendix B)	Drainage leading to Brumalow Creek
Install New Security Fence	Soil disturbance limited to individual post holes for fence spaced along the length of the fence. No significant runoff or impacts would result.	Drainages leading to Brumalow Creek and Bradley Creek
Construct Conference Center Administration Building	Potential runoff from clearing and grading of 0.1 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Woods Reservoir
Relocate Marina and Construct Maintenance Building	Potential runoff from clearing and grading of 0.04 acre. Use of appropriate BMPs as described in Section 3.2 would avoid impacts.	Woods Reservoir

4.4.2 No-Action Alternative

Unpaved parking lots and roads generate minor amounts of soil runoff, which could result in minor local impacts to water quality. Such runoff would continue under the No-Action Alternative.

4.5 Biological Resources

4.5.1 Proposed Action

Biological resources (plants and animals) and related habitats (foraging and nesting areas) could be directly affected by the Proposed Action due to construction and increased use of areas. Impacts considered include those that could directly and physically affect biological organisms and the potential for actions to alter/affect the quality and utility of the habitats used by biological organisms.

4.5.1.1 Impacts to Non-sensitive Flora and Fauna

Impacts to common flora and fauna would result from construction activities, from displacement as animals avoid those areas with ongoing construction activities, and from indirect impacts associated with loss of habitat.

Most of the project disturbance (approximately 19 acres) would occur on lands that contain no vegetation, including unpaved roads and gravel/dirt lots in the Industrial Complex. Some of these areas are completely surrounded by other industrial facilities and isolated from potential habitat for flora and fauna. No impacts to flora and fauna would occur in these isolated work areas (Table 4-3). Only minor displacement would be expected to occur from paving or construction on unvegetated areas adjacent to potential habitat for flora and fauna (Table 4-3). Animals near these areas may leave the vicinity of the construction/paving activity, but would be expected to return once construction or paving was complete.

TABLE 4-3
Summary of Biological/ Habitat Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Biological and Habitat Impact
Paving Projects	
Pave Parking at Hazardous Materials Building	No impacts, work would be confined to an isolated area that is already developed.
Pave Treatment Plant Road	Temporary disturbance to local biota during construction. No loss or conversion of habitat.
Pave Drive to Salvage Yard	Temporary disturbance to local biota during construction. No loss or conversion of habitat.
Pave Lot at Sandblast Facility	Temporary disturbance to local biota during construction. No loss or conversion of habitat.
Construct Turning Lane at Gate 2 Entrance	No loss of habitat. Temporary disturbance to local biota during construction.
Pave Road to FamCamp	Temporary disturbance to local biota during construction. No loss or conversion of habitat.
Construct Parking for Building 445	Temporary disturbance to local biota during construction. No loss or conversion of habitat.
Pave Access Roads and Parking near J-6 Complex	Temporary disturbance to local biota during construction. No loss or conversion of habitat.
Construct Vehicle Pad at LN2/GN2 Loading Facility	No impacts, work would be confined to an isolated area that is already developed.
Modify GLC Parking	No impacts, work would be confined to an isolated area that is already developed paved land (0.11 acre) would be converted to landscaped lawn.
Construction Projects	
Construct Consolidated Civil Engineering Complex	Loss of 5.0 acres of isolated forest and 1.0 acre of semi-improved land, permanent displacement of animals (Photo 1, Appendix B).
Construct Consolidated Precision Measurement Equipment Laboratory/Chemistry Laboratory Complex	Loss of 0.5 acre of semi-improved land and 0.92 acre of forested ground (Photo 2, Appendix B). Temporary disturbance to local biota during construction.
Construct Fuels Laboratory	No impacts, work would be confined to an isolated area that is already developed.
Construct Storage Building and Install Equipment at Skimming Lagoon	Loss of 0.05 acre of forest land (Photo 3, Appendix B). Temporary disturbance to local biota during construction.
Construct BX Annex	Temporary disturbance to local biota during construction.
Construct Fitness Center	Loss of 0.5 acre of landscaped ground (Photo 4, Appendix B). Temporary disturbance to local biota during construction.

TABLE 4-3
Summary of Biological/ Habitat Impacts
Building, Paving, and General Construction Final EA

Proposed Project	Biological and Habitat Impact
Construct Running Track and Warm-up Area	Loss of 0.53 acre of landscaped ground, but approximately 50 percent of the lost ground would be replanted to grass (Photo 7, Appendix B). Temporary disturbance to local biota during construction.
Construct Storage Building	Temporary disturbance to local biota during construction (Photo 5, Appendix B).
Install New Security Fence	Conversion of 0.05 acre of un-improved land to semi-improved land. Temporary disturbance to local biota during construction. Fence would block movement of larger animals following construction. Installation of fence would take into account the location of the hardwood trees and associated tree drip lines to minimize impacts to those resources.
Construct Conference Center Administration Building	No impacts, work would be confined to an isolated area that is already developed.
Relocate marina and construct Maintenance Building	No impacts, work would be confined to an isolated area that is already developed. Floating marina would be placed in Woods Reservoir.

During land clearing and grading in un-improved and semi-improved lands and at locations where buildings, roads, and parking lots do not currently exist, all plants would be eliminated from the area and limited incidental animal injury or mortality could occur. Care would be taken to minimize damage to hardwood trees located in the vicinity of the construction activities. Most animals (such as birds, deer, rodents, opossums, and reptiles) would avoid the area during construction.

Implementation of the projects would result in conversion of approximately 9.4 acres of land to more intensive land use practices (primarily buildings and pavement). Of these, approximately 6 acres of forested land would be replaced by semi-improved land, paving, or structures. Approximately 2 acres of semi-improved land would be replaced by paving or structures, 0.64 acre of lawn with trees would be replaced by a running track and warm-up area with grass in the center or buildings, and the remaining acreage would involve conversion of existing landscaped areas. There would also be 0.11 acre of pavement converted to landscaped lawn (Table 4-3).

Loss of forested habitat types (approximately 6 acres) would be a permanent loss but would represent less than 0.1 percent of forested habitat (approximately 29,000 acres) on-Base and would be confined to the AEDC area, where habitat value is reduced as a result of the proximity to intense human use. Lands that would be converted to pavement or buildings either currently are disturbed habitats or are habitat types common on the Base. With the exception of the roads in the FamCamp, the ALC/GLC areas, and the turning lane on Wattendorf Highway, all areas that would be disturbed are within the Industrial Complex of AEDC and currently provide little or no population level habitat value for flora and fauna

because of the degree of isolation from other suitable habitat patches and the proximity to intense human use, including testing activities. No habitat would be lost from paving the FamCamp roads, and only limited existing road shoulder would be lost in adding a turning lane to Wattendorf Highway (Table 4-3). This would be a negligible impact on habitat for animals and plants on Arnold AFB. As discussed above, the land use changes are expected to be minor.

There is the possibility of animal mortality occurring during construction. However, the sites are located in areas of high vehicle and pedestrian traffic. Large aggregations of animals would not be expected to occur. Any losses would not seriously affect regional animal population levels. Impacts are considered minor.

Animals displaced from the construction areas would relocate to other similar habitats nearby. Animals displaced from the adjacent habitats would be expected to return following the disturbance. Therefore, displacement of animals would be temporary and minor.

4.5.1.2 Impacts to Sensitive Species

No sensitive species are known to occur or use the immediate project areas in the Industrial Complex on the Base. No impacts to sensitive species would result from implementation of projects in the Industrial Complex.

There are two potential sensitive species conflicts resulting from projects outside of the Industrial Complex. Bald eagles and gray bats may use areas along the north shore of Woods Reservoir during the time project activities occur.

Wintering bald eagles have been observed on Woods Reservoir. Construction activity in the FamCamp would be screened from eagles by intervening vegetation, which would minimize the potential for bald eagles to be disturbed by construction-related activities. Construction in the GLC and ALC areas would have less screening vegetation and may cause eagles to avoid the immediate area during construction. However, this temporary displacement would be a negligible impact on bald eagles.

The gray bat may be present, either traveling or foraging, along the north shore of Woods Reservoir in the vicinity of proposed construction and paving projects. However, gray bats are nocturnal and construction activities would occur during daylight hours. The temporal separation of project activities and potential gray bat use would result in no impact on the species.

4.5.1.3 Impacts to Wetlands

There are no wetlands within any areas where construction or paving is proposed. Therefore, no impacts to wetland habitats would result.

4.5.2 No-Action Alternative

No impacts to biological resources would result from the No-Action Alternative.

4.6 Safety and Occupational Health

4.6.1 Proposed Action

Workers would have the potential for accidents as a result of construction activities. Construction workers would use appropriate protection and would follow OSHA standards and procedures. The construction contractor would be responsible for ensuring that all contractor employees (and subcontractors) comply with all applicable OSHA standards. Therefore, the safety and occupational health of construction workers or other persons in the construction areas would not be impacted. During road paving activities, the contractors would be responsible for controlling traffic near the construction activities. These steps would minimize the likelihood of vehicular accidents occurring at the site. Impacts are considered minor.

4.6.2 No-Action Alternative

No impacts to safety and occupational health would result from the No-Action Alternative.

4.7 Noise

4.7.1 Proposed Action

Heavy equipment such as bulldozers, graders, backhoes, excavators, dump trucks, and cement trucks would generate noise that could affect the onsite workers. Construction equipment typically emits noise in the 86- to 94-dB range. Construction workers would use hearing protection and would follow OSHA standards and procedures.

Some construction sites are located around existing buildings. Personnel could be affected by sound emanating from the construction sites. Construction noise levels would be confined to daytime hours and would be above background levels unless very noisy test facilities were operating. Direct exposure would be temporary, limited to times when personnel were traveling between vehicles and buildings or among buildings. Any impacts would be temporary and minor.

4.7.2 No-Action Alternative

No noise impacts would result from implementation of the No-Action Alternative.

4.8 Air Quality

4.8.1 Proposed Action

During construction, air quality impacts could occur from dust carried offsite and combustive emissions from construction equipment. The primary risks from blowing dust particles relate to human health and human nuisance values. Fugitive dust can contribute to respiratory health problems and create an inhospitable working environment. Deposition on surfaces can be a nuisance to those living or working downwind.

Measures that would be implemented to reduce or eliminate fugitive dust emissions would include the following:

- *Sprinkling/Irrigation*. Sprinkling the ground surface with water until it is moist is an effective dust control method for haul roads and other traffic routes (Smolen et al., 1988). This practice can be applied to almost any site. When suppression methods involving water are used, care would be exercised to minimize over-watering that could cause the transport of mud onto adjoining roadways, ultimately increasing the dust problem.
- *Vegetative Cover*. In areas not expected to handle vehicle traffic, vegetative stabilization of disturbed soil is often desirable. Vegetation provides coverage to surface soils and slows wind velocity at the ground surface, thus reducing the potential for dust to become airborne.
- *Mulch*. Mulching can be a quick and effective means of dust control for recently disturbed areas.

4.8.2 No-Action Alternative

Unpaved parking lots and roads generate minor amounts of fugitive dust, which could result in temporary minor local impacts to air quality. These releases of fugitive dust would continue under the No-Action Alternative.

4.9 IRP and Hazardous Materials

4.9.1 Proposed Action

Some of the proposed construction and paving projects overlie identified IRP sites in the AEDC compound (Figures 3-6 and 3-7). No earthmoving or construction of facility foundations would be done in areas with contaminated soils. However, workers may be exposed through accidental ingestion of contaminants or through inhalation of vapors released during construction and earthmoving activities if a contaminated groundwater plume is contacted.

Monitoring would be required during excavation in areas overlapping SWMUs to prevent exposure of the workers to the potentially hazardous material. Construction plans would include appropriate worker protection measures. The construction crew would have a health and safety plan and a hazardous materials plan as reference documents in case contaminated soils were encountered. Appropriate health and safety steps would be required during construction to limit possible exposure to vapors or contaminated soil. Any contaminated soil encountered during construction would be disposed of in accordance with all applicable laws and regulations.

Where buildings would be placed above areas of contamination, building designs would incorporate features to prevent vapor accumulation, which could present a hazard.

4.9.2 No-Action Alternative

No IRP or hazardous materials impacts would result from implementation of the No-Action Alternative.

4.10 Cultural Resources

Impacts analysis focuses on the potential for the Proposed Action to affect the quality and utility of significant historical and cultural resources.

4.10.1 Proposed Action

Most of the proposed construction and paving sites were previously screened for cultural resources and the buildable parcels were identified. The parcels selected for construction of buildings, parking lots, and roads were investigated for cultural resource issues through consultation with the SHPO in 2003. This effort was documented in Archeological Assessment Report No. 300 (R. Alvey, personal communication, 2004). There are no significant or potentially significant cultural resources in these areas. However, the proposed site of the running track has not been investigated for cultural resources. This site would be surveyed as part of the Phase I survey currently being conducted. This Phase I survey covers 1,500 acres Base-wide and approximately 27 acres within the Industrial Complex, including the proposed running track area. Should any significant or potentially significant cultural resources be discovered during these surveys, Arnold AFB would coordinate with SHPO to implement appropriate mitigation to prevent adverse impacts.

Most of the sites have been determined not to have cultural resources and procedures are in place to assure that no impacts to significant or potentially significant cultural resources discovered at previously unsurveyed sites would occur. Therefore, no significant impacts on cultural resources are expected to result from implementation of the Proposed Action.

4.10.2 No-Action Alternative

Under the No-Action Alternative, no building, paving, or general construction would occur. Therefore, no impacts on cultural resources would result from implementation of the No-Action Alternative.

4.11 Traffic Flow and Utility Infrastructure

4.11.1 Proposed Action

Construction would cause temporary impacts to roads and utilities. It would be necessary to interrupt utilities temporarily in portions of the Base and close parking lots and sections of road during construction.

The following roads may be impacted for short periods during construction and paving:

- Wattendorf Highway near Gate 2
- On-Base road to Gate 2
- Drive to Salvage Yard
- Northshore Road near FamCamp
- Roads within FamCamp
- Treatment Plant Road
- Access roads near J-6 Complex

The Proposed Action would have no impact on utility infrastructure and would have a temporary minor impact on traffic flow. Traffic control with flagmen would allow traffic to continue to move without undue delays. Existing underground utilities at the J-6 Test Cell would be identified in advance of installation and avoided during construction to prevent impacts.

Once complete, new roads and lots would improve traffic flow on-Base, resulting in a benefit to traffic.

4.11.2 No-Action Alternative

Implementation of the No-Action Alternative would result in continued congestion at Gate 2 during peak delivery times.

4.12 Socioeconomic Factors

4.12.1 Proposed Action

The Proposed Action would have a minor positive impact on socioeconomic factors. There would be temporary employment from construction and paving activities that would be spread over a period of 5 years.

Following completion of the new Fitness Center, recreational facilities and opportunities would be enhanced for the staff of Arnold AFB and other members of the military in the region.

4.12.2 No-Action Alternative

No socioeconomic impacts would result from implementation of the No-Action Alternative.

4.13 Cumulative Impacts

The most severe environmental impacts may not result from the direct effects of any particular action, but from the combination of effects of multiple, independent actions over time. As defined in 40 CFR 1508.7, a cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Some authorities contend that most environmental effects can be seen as cumulative because almost all systems have already been modified. Principles of cumulative impacts analysis are described in the CEQ guide *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ, 1997).

For this analysis, cumulative impacts could result from incremental loss of habitat value from conversion to other uses or from incremental impacts to hydrology or water quality resulting from increased impervious surfaces within the region.

4.13.1 Proposed Action

No cumulative impacts are anticipated with the exception of minor cumulative impacts to water quality or hydrology. However, the cumulative increase in impervious area in AEDC

would not significantly impact hydrology and water quality away from the Base. As discussed above, the existing infrastructure for handling stormwater runoff would be able to accommodate the slight increase in stormwater runoff resulting from implementation of the Proposed Action. While it is conceivable that future development within AEDC would exceed the ability of existing infrastructure to accommodate stormwater runoff, improvements in the stormwater infrastructure at AEDC would offset any such potential. Any future development on the Base would comply with the CWA, which would preclude any direct impacts to hydrology or water quality from those projects.

All conversion of forested land would be confined to within AEDC. All projects outside AEDC would be within already cleared or developed areas. Approximately 19 acres of land would be disturbed during project implementation. Of this, approximately 9.7 acres are currently highly disturbed, containing pavement, gravel lots and roads, and buildings. This acreage would remain developed. Approximately 9 acres of existing unimproved or semi-improved grounds would be converted to a more intensive land use such as buildings, pavement, and landscaped grounds. Concurrently, approximately 0.1 acre of paved grounds would be converted to the less intensive land use of landscaped lawn.

There would be a loss of approximately 6 acres of forested land from the Proposed Action. However, this loss of forested land would be entirely within the AEDC area. By restricting forest conversion to the industrialized portion of the Base, the incremental loss of habitat value would be less than if the same acreage were converted in more pristine areas of Arnold AFB. With more than 29,000 acres of forest land on Arnold AFB, and substantially more in the region surrounding the Base, this minor acreage conversion of fragmented and isolated forest land would not be significant, either individually or when combined with other potentially foreseeable land clearing in the region. No significant cumulative impacts to wetlands, floodplain, or threatened and endangered species are anticipated. Transportation improvements would result in an overall cumulative positive impact as road paving and parking area improvements would result in greater safety and mobility of the transportation system.

4.13.2 No-Action Alternative

There would be no change from existing conditions and no potential for cumulative impacts resulting from the No Action Alternative.

5.0 Plan, Permit, and Management Requirements

As no impacts on Waters of the United States or Waters of the State of Tennessee would occur, there would be no need to obtain CWA Section 404 permitting from the USACE for the Proposed Action. Because no impacts on Waters of the State of Tennessee would occur, there would be no need to obtain CWA Section 401 water quality certification or a Tennessee Aquatic Resources Alteration Permit from TDEC for the Proposed Action.

There is a regulatory requirement to obtain a stormwater permit if 1 acre (43,560 ft^2) or more of land is disturbed during construction (Jennifer Innes, TDEC, personal communication, July 2004). Four projects evaluated in this EA would require filing an NOI for stormwater permitting: pave lot at sandblast facility, pave access roads and parking near J-6 Complex, construct consolidated CE Complex, and construct consolidated PMEL/Chemistry Laboratory Complex. Appropriate erosion and sediment control measures would be implemented to control runoff.

6.0 List of Preparers

Russell Short/Senior Project Manager/28 years of experience/Master of Arts

Rich Reaves/Environmental Scientist/10 years of experience/PhD.

Rob Price/Environmental Scientist/9 years of experience/Master of Science; Master of Public Affairs

Paul Rose/Project Planner/16 years of experience/Master of City Planning

Kira Zender/Senior Planner/10 years of experience/Master of Urban and Regional Planning

Collin Horace/GIS Analyst/5 years of experience/Bachelor of Science

David Dunagan/Technical Editor/26 years of experience/Master of Arts

7.0 List of Contacts

DoD

Richard McWhite, Civ AEDC/SDE

Kristopher Hughes, Civ AEDC/SDF

ATA

Steve Farrington, Aerospace Testing Alliance Natural Resources

Kevin Fitch, Aerospace Testing Alliance Natural Resources

John Lamb, Aerospace Testing Alliance Natural Resources

Mark Moran, Aerospace Testing Alliance Natural Resources

Phillip Sherrill, Aerospace Testing Alliance Natural Resources

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Appendix A

Air Force Form 813 —
Request for Environmental Impact Analysis

Pave Hazardous Materials Lot

Environmental Impact Analysis: 000161 - CNST PAVED PARKING, HAZMAT BLD-IDIQ - Bldg. 1456

From: Michael Gold	**Proponent Org:** ID10	**Project:** ANZY990136

Purpose And Need: Parking lot has never been paved; ruts and depressions are caused by traffic using this facility; customers and building occupants must walk thru mud and water during rains.

Description And Alternative: Provide asphalt pavement over existing gravel and dirt parking lot.

Name:	Impact:	Status:	Description:
Air Installation Compatable:	No Effect	Closed	
Air Quality:	No Effect	Closed	
Water Resources:	No Effect	Closed	
Safety And Occupational Health:	No Effect	Closed	Follow OSHA regulations
Hazardous Materials:	No Effect	Closed	
Hazardous Waste:	No Effect	Closed	
Biological Resources:	No Effect	Closed	Adequate site protection should be installed during upgrade of parking lot to prevent silt and sediment from leaving the site.
Cultural Resources:	No Effect	Closed	This is not a historic property.
Geology And Soils:	No Effect	Closed	
Socioeconomic:	No Effect	Closed	
Installation Restoration Program:	No Effect	Closed	

Other Impacts:

Remarks:

Determination: A2.3.11 Actions similar to other actions which have been determined to have an insignificant impact in a similar setting.

Determination Justification: EA used- Construction of Gate House and Fence, AAFB02-91

Environmental Planning Approval Signature ---- Philip Sherrill ***Comments*** ----

Environmental Final Approval Signature ---- Philip Sherrill ***Comments*** ----

Media Management Approval Signature ---- Pam King ***Comments*** ----

EIAP Approval Signature ---- Richard McWhite *Comments* ----

SDE Director Approval Signature ---- Frank Duncan *Comments* ---- Need to find a valid catex, I suggest A2.3.11. See if we have a building construction that had a parking lot built as part of the construction.

User	Action	Date	Comments
Philip A Sherrill	connect	19-Oct-2004 08:17 AM	Has EIA from FY Workload Plan 10854 0
Frank Duncan	promote	10-Jun-2004 10:28 AM	
Frank Duncan	approve	10-Jun-2004 10:28 AM	Need to find a valid catex, I suggest A2.3.11. See if we have a building construction that had a parking lot built as part of the construction.
Richard W McWhite	approve	10-Jun-2004 10:22 AM	
Richard W McWhite	modify	10-Jun-2004 10:21 AM	Determination: A2.3.11 Actions similar to other actions which have been determined to have an insignificant impact in a similar setting. was: Further Environmental Analysis Required
Richard W McWhite	modify	10-Jun-2004 10:21 AM	Determination Justification: EA used- Construction of Gate House and Fence, AAFB02-91 was: No CATEXs apply.
Frank Duncan	reject	07-Jun-2004 10:42 AM	Need to find a valid catex, I suggest A2.3.11. See if we have a building construction that had a parking lot built as part of the construction.
Richard W McWhite	approve	07-Jun-2004 08:09 AM	
Pamela F King	promote	07-Jun-2004 07:41 AM	
Pamela F King	approve	07-Jun-2004 07:41 AM	
Philip A Sherrill	promote	19-May-2004 09:19 AM	
Philip A Sherrill	approve	19-May-2004 09:19 AM	
Philip A Sherrill	modify	19-May-2004 09:18 AM	Determination: Further Environmental Analysis Required was:
Philip A Sherrill	modify	19-May-2004 09:18 AM	Determination Justification: No CATEXs apply. was:
Marion B Bragg	modify	17-May-2004 02:12 PM	Safety And Occupational Health Impact: No Effect was:

Marion B Bragg	modify	17-May-2004 02:12 PM	Safety And Occupational Health Impact Status: Closed was: Open
Marion B Bragg	modify	17-May-2004 02:12 PM	Safety And Occupational Health Impact Description: Follow OSHA regulations was:
Marion B Bragg	approve	17-May-2004 02:12 PM	
Marion B Bragg	promote	17-May-2004 02:12 PM	
Mark R Moran	modify	11-May-2004 07:02 AM	Biological Resources Impact Status: Closed was: Open
Mark R Moran	modify	11-May-2004 07:02 AM	Biological Resources Impact Description: Adequate site protection should be installed during upgrade of parking lot to prevent silt and sediment from leaving the site. was:
Mark R Moran	modify	11-May-2004 07:02 AM	Biological Resources Impact: No Effect was:
Michael E Hodges	modify	07-May-2004 10:54 AM	Hazardous Materials Impact Status: Closed was: Open
Michael E Hodges	modify	07-May-2004 10:54 AM	Hazardous Materials Impact: No Effect was:
H Ben Partin	modify	07-May-2004 08:49 AM	Hazardous Waste Impact Status: Closed was: Open
H Ben Partin	modify	07-May-2004 08:49 AM	Hazardous Waste Impact: No Effect was:
Jeffrey K Holt	modify	07-May-2004 07:56 AM	Water Resources Impact Status: Closed was: Open
Jeffrey K Holt	modify	07-May-2004 07:56 AM	Air Quality Impact Status: Closed was: Open
Jeffrey K Holt	modify	07-May-2004 07:56 AM	Air Quality Impact: No Effect was:
Jeffrey K Holt	modify	07-May-2004 07:56 AM	Water Resources Impact: No Effect was:
Dennis D. Flatt	modify	07-May-2004 07:32 AM	Installation Restoration Program Impact Status: Closed was: Open
Dennis D. Flatt	modify	07-May-2004 07:32 AM	Installation Restoration Program Impact: No Effect was:
Dennis D. Flatt	modify	07-May-2004 07:32 AM	Geology And Soils Impact Status: Closed was: Open
		07-May-2004 07:32	

Dennis D. Flatt	modify	AM	Geology And Soils Impact: No Effect was:
Richard L Alvey	modify	07-May-2004 07:28 AM	Cultural Resources Impact Status: Closed was: Open
Richard L Alvey	modify	07-May-2004 07:28 AM	Cultural Resources Impact Description: This is not a historic property. was:
Richard L Alvey	modify	07-May-2004 07:28 AM	Cultural Resources Impact: No Effect was:
Philip A Sherrill	approve	06-May-2004 03:14 PM	
Philip A Sherrill	promote	06-May-2004 03:14 PM	
Philip A Sherrill	modify	06-May-2004 03:14 PM	Air Installation Compatible Impact Status: Closed was: Open
Philip A Sherrill	modify	06-May-2004 03:14 PM	Title: CNST PAVED PARKING, HAZMAT BLD-IDIQ - Bldg. 1456 was: CNST PAVED PARKING, HAZMAT BLD-IDIQ
Philip A Sherrill	modify	06-May-2004 03:14 PM	Air Installation Compatible Impact: No Effect was:
Philip A Sherrill	modify	06-May-2004 03:14 PM	Socioeconomic Impact Status: Closed was: Open
Philip A Sherrill	modify	06-May-2004 03:14 PM	Socioeconomic Impact: No Effect was:
Scott Williams	change vault	27-Apr-2004 11:57 AM	was: ACS
Kristopher M Hughes	approve	15-Apr-2004 08:08 AM	
Kristopher M Hughes	promote	15-Apr-2004 08:08 AM	
Michael G Gold	promote	15-Apr-2004 06:38 AM	
Michael G Gold	approve	15-Apr-2004 06:38 AM	
Michael G Gold	modify	15-Apr-2004 06:38 AM	3 Letter: Kristopher Hughes was:
Michael G Gold	change name	15-Apr-2004 06:38 AM	was: Auto revision:
Michael G Gold	create	15-Apr-2004 06:38 AM	

Pave Building 445 Lot

ACES PROJECT MANAGEMENT DATABASE

Long Range Plan Project Detail Sheet

ACES PROJECT: ANZY920251 TITLE: CSTR OFF-STREET PARK BLDG 445

JOB NUMBER:

WORK REQUEST: GA8474

WORK REQUEST APPROVAL DATE: 5/15/1992

CATEGORY: INFR

SYSTEM: PAVE

FY: 2007

PROGRAM TYPE: O&M

FACILITY NUMBER: 60012

FUNDING SOURCE: SRM

BUSINESS AREA: F/I

ESTIMATED COST

IN HOUSE LABOR:	$0
IN HOUSE MATERIAL:	$0
GFE AMOUNT:	$141,373
PROJECT MANAGEMENT:	$7,000
TOTAL EXECUTION COST:	**$148,373**

DESIGN COST:

STATUS

LOCAL STATUS: NOTINDESIGN

COMMAND STATUS: BSE

DESIGN % COMPLETE: 0

FIM RATING : ESS

PROJECT SCOPE:

Provide customer parking on East Drive near the sample delivery entrance.

JUSTIFICATION:

Lab customers currently (illegally) park along East Drive creating a traffic hazard, or in a remote area requiring a long walk with samples, sometimes requiring multiple trips and or hazards. There is presently no parking lot for Bldg 445. The closest parking is the Main Cafe 500 ft away. Construction of a parking lot will provice easy access to Bldg 445.

Pave LN2 GN2 Pad

ACES PROJECT MANAGEMENT DATABASE

Long Range Plan Project Detail Sheet

ACES PROJECT: ANZY009132 TITLE: CNST CONC PAD, LN2/GN2

JOB NUMBER:

WORK REQUEST: 0037226

WORK REQUEST APPROVAL DATE: 12/22/1999

CATEGORY: INFR

SYSTEM: PAVE

FY: 2009

PROGRAM TYPE: O&M

FACILITY NUMBER: 530

FUNDING SOURCE: R&D

BUSINESS AREA: S/M

ESTIMATED COST

IN HOUSE LABOR:	$0
IN HOUSE MATERIAL:	$0
GFE AMOUNT:	$82,840
PROJECT MANAGEMENT:	$3,800
TOTAL EXECUTION COST:	**$86,640**

STATUS

LOCAL STATUS: NOTINDESIGN

COMMAND STATUS: BSE

DESIGN % COMPLETE: 0

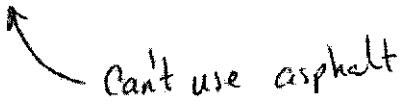
FIM RATING : ESS

DESIGN COST: $7,000

PROJECT SCOPE:

JUSTIFICATION:

Heavy truck traffic at loading/unloading area makes it difficult to maintain clean conditions. Concrete is necessary due to liquid oxygen presence.



Construct Civil Engineering Complex

1. COMPONENT	FY 2007 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	FACILITY MAINTENANCE COMPLEX

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
72896	219-944	ANZY993003	13,800

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT	COST
FACILITY MAINTENANCE COMPLEX				9,208
ADMINISTRATIVE	SM	1,790	1,430	(2,560)
SHOPS	SM	6,000	1,059	(6,354)
ANTITERRORISM/FORCE PROTECTION	SM	7,790	14	(109)
INTERNAL COMMUNICATIONS SUPPORT	LS			(185)
SUPPORTING FACILITIES				3,192
UTILITIES	LS			(332)
PAVEMENTS	LS			(226)
SITE IMPROVEMENTS	LS			(264)
COMMUNICATIONS SUPPORT	LS			(18)
OVERHEAD CRANES	LS			(112)
COVERED STORAGE	SM	1,250	561	(701)
DEMOLITION	SM	7,506	205	(1,539)
SUBTOTAL				12,400
CONTINGENCY (5.0 %)				620
TOTAL CONTRACT COST				13,020
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)				742
TOTAL REQUEST				13,762
TOTAL REQUEST (ROUNDED)				13,800
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				(1,250)

10. Description of Proposed Construction: Construct a single story facility with reinforced concrete foundation, floor slabs, masonry walls, brick veneer, and standing seam metal roof. Facility will provide space for base engineering administrative and shop support. Work includes electrical, mechanical, fire detection/suppression, prewiring of the facility, supporting utilities, site improvements, landscaping, and parking. Demolish seven buildings totaling 7,508 SM. Comply with DoD force protection requirements per unified facilities criteria.

Air Conditioning: 170Tons

11. REQUIREMENT: 7,790 SM ADEQUATE: SM SUBSTANDARD: 7,506 SM

PROJECT: Construct a Facility Maintenance Complex. (Current Mission)

REQUIREMENT: A new maintenance complex is required to consolidate the operational Civil Engineering workforce, the Safety and Health Group, and the Corps of Engineers AEDC Office into a modern, efficient, maintenance and operational complex. The complex will include the Civil Engineering operations and shop personnel, equipment and bench stock, real estate management, and their supporting administrative functions, such as work control and management. Additionally the administrative and training workspace of the Safety and Health Group and the administrative space for the Corps of Engineers will be included. Comply with DoD force protection requirements per unified facilities

1. COMPONENT AIR FORCE	FY 2007 MILITARY CONSTRUCTION PROJECT DATA (computer generated)	2. DATE

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	FACILITY MAINTENANCE COMPLEX

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
72896	219-944	ANZY993003	13,800

criteria.

CURRENT SITUATION: The existing facility was constructed in 1952, is in poor condition, and is improperly configured to support its current mission. This building requires a new roof and HVAC system and upgrades to the outdated utility systems. The programmed cost of restoring this facility to current standards is $2.2M and even this extensive upgrade would not address the exterior architectural appearance of the existing building or its location adjacent to a high noise area (ASTF wind tunnels). During testing, the noise level is similar to that adjacent to a jet runway, making normal conversation difficult, and even rattling the building's windows. Because of the high programmed costs to upgrade the existing facility, this requirement has been repeatedly deferred to fund more critical projects. As a result the building continues to deteriorate to the point it has become a forced use facility. The Safety and Health Group currently occupies a portion of the administrative area of the building, using it to provide training to the workforce. This is a make-do arrangement, as the facility was not designed for training large groups of people. Parking and restroom facilities are inadequate, and the room arrangement is not well suited for large group presentations. The Corps of Engineers is currently housed in a metal building originally constructed as a warehouse and shop.

IMPACT IF NOT PROVIDED: Limited operations and maintenance funds spread over multiple facilities precludes restoring any of them. These buildings continue to deteriorate with only critical repairs possible. Utilities are wasted conditioning energy inefficient facilities. The mission of Civil Engineering will continue to be stretched to the limit both by striving to maintain these facilities in a habitable condition and by the lack of close effective communications that will be available in a consolidated working environment.

ADDITIONAL: This project meets the criteria/scope specified in Air Force Handbook 32-1084, "Facility Requirements." An economic analysis has been prepared comparing the alternatives of new construction, renovation, leasing and status quo operation. Based on the net present values and benefits of the respective alternatives, new construction was found to be the most cost efficient over the life of the project. Base Civil Engineer: Lt Col Michael A. Blaylock, (931) 454-4320. Base Maintenance Shops: 6,000 SM = 64,500 SF; Administrative Support: 1,790 SM = 19,280 SF. Design Build - Design Costs (4% of Subtotal Cost): $496,000.

JOINT USE CERTIFICATION: This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.

1. COMPONENT	FY 2007 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
ARNOLD AIR FORCE BASE, TENNESSEE	FACILITY MAINTENANCE COMPLEX

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
72896	219-944	ANZY993003	13,800

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Project to be accomplished by design-build procedures

(2) Basis:
(a) Standard or Definitive Design - NO
(b) Where Design Was Most Recently Used -

(3) All Other Design Costs 372

(4) Construction Contract Award 07 FEB

(5) Construction Start 07 APR

(6) Construction Completion 08 SEP

(7) Energy Study/Life-Cycle analysis was/will be performed NO

b. Equipment associated with this project provided from other appropriations:

EQUIPMENT NOMENCLATURE	PROCURING APPRO	FISCAL YEAR APPROPRIATED OR REQUESTED	COST ($000)
SHOP EQUIPMENT (NEW & RELOCATE	3400	2007	750
PREWIRED WORKSTATIONS	3400	2007	500

Construct PMEL and Chem Lab Complex

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
RCS: AAFB-03-45

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO *(Environmental Planning Function)*	2. FROM *(Proponent organization and functional address symbol)*	2a. TELEPHONE NO.
ESHQ	Civil Engineering Operations (E10)	5711

3. TITLE OF PROPOSED ACTION
Construct Consolidated Laboratory Complex

4. PURPOSE AND NEED FOR ACTION *(Identify decision to be made and need date)*
Replace PMEL and Chemistry Lab with new facility (2004 MILCON)

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES *(DOPAA) (Provide sufficient details for evaluation of the total action.)*
1. Construct 3725 SM consolidated laboratory complex for PMEL and Chemistry Lab.
2. Alternatives: Renovate existing; no action

6. PROPONENT APPROVAL *(Name and Grade)*	6a. SIGNATURE	6b. DATE
Michael G. Gold		20030317

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.

(Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE *(Noise, accident potential, encroachment, etc.)*		X		
8. AIR QUALITY *(Emissions, attainment status, state implementation plan, etc.)*		X		
9. WATER RESOURCES *(Quality, quantity, source, etc.)*		X		
10. SAFETY AND OCCUPATIONAL HEALTH *(Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)*		X		
11. HAZARDOUS MATERIALS/WASTE *(Use/storage/generation, solid waste, etc.)*		X		
12. BIOLOGICAL RESOURCES *(Wetlands/floodplains, threatened or endangered species, etc.)*				X
13. CULTURAL RESOURCES *(Native American burial sites, archaeological, historical, etc.)*		X		
14. GEOLOGY AND SOILS *(Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*			X	
15. SOCIOECONOMIC *(Employment/population projections, school and local fiscal impacts, etc.)*		X		
16. OTHER *(Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17.
- [ ] PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR
- [X] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS
This action requires the completion of an Environmental Assessment (EA).

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION *(Name and Grade)*	19a. SIGNATURE	19b. DATE
Frank A. Duncan, GS-13 Deputy, Environmental Management Division		20 Mar 03

Construct Fuels Lab

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
RCS AAFB-04-046

INSTRUCTIONS: Section I to be completed by Proponent, Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).

SECTION I – PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and function address symbol)	2a. TELEPHONE NO.
ATA Environmental/ Phil Sherrill	MICHAEL GOLD	5711

3. TITLE OF PROPOSED ACTION
ANZY020049, CONSTRLCT FUELS LABORATORY (SYNERGEN WR # 01 12433)

4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date)
RESOLVES PROBLEMS WITH INADEQUATE LAB SPACE AT CHEM LAB

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.)
CONSTRUCT NEW FUELS LABORATORY AT OPERATIONAL FUEL FARM - DESC FUNDED - $300K. Provide additional space for fuels lab(ROOM 137) to correct fire safety deficiencies. Provide life safety requirements IAW NFPA 101, NFPA 45, AFOSH Standard 91-38 and Military Handbook 1008C. FSD III Assigned. INDUSTRIAL HYGIENE COORDINATION: 6/4/02 Additional space must consider presence of toxic/flammable vapors and include adequate exhaust ventilation

6. PROPONENT APPROVAL (Name and grade)	6a. SIGNATURE	6b. DATE
MICHAEL G. GOLD		4/9/04

SECTION II – PRELIMINARY ENVIRONMENTAL SURVEY. (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U – unknown effect)	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)		X		
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)		X		
9. WATER RESOURCES (Quality, quantity, source, etc.)		X		
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)		X		
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)		X		
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)		X		
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)		X		
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)		X		
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)		X		
16. OTHER (Potential impacts not addressed above.)		X		

SECTION III – ENVIRONMENTAL ANALYSIS DETERMINATION

17
- [ ] PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____, OR
- [X] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED

18 REMARKS

Environmental Assessment is required.

SEE CONTINUATION SHEET FOR REVIEW COMMENTS

19 ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade)	19a. SIGNATURE	19b. DATE
Frank A. Duncan, GS-13 **Deputy, Environmental Management Division**		09/27/04

18. AAFB-04-046

Interdisciplinary Team Review

Public Affairs: PA needs *to* keep this item on its scope for possible coverage, at least in the base paper, and possibly in local media. Building new facilities would suggest that the base is "here to stay," and local folks would be glad *to* hear about that -- plus the fact that we're building facilities to improve fire safety is always a good thing to publicize.

Compliance (Air/Water): No issues.

Natural Resources: No issues.

Cultural Resources: No issues.

Hazardous Materials: Hazmat will require MSDSs for paints. coatings. sealants. etc. used in construction.

Hazardous Waste: No issues.

Restoration: No issues.

Safety/Health: No issues.

Construct BX Annex

Environmental Impact Analysis: 000218 - CONSTRUCT BX ANNEX

From: Michael Gold	**Proponent Org:** ID10	**Project:** ANZY030037

Purpose And Need: Existing structure has design defects in the roof structure that create constant leakage & maintenance problems. It is not feasible to reroof the existing annex do to configuration issues with the underlying structure.

Description And Alternative: Demolish existing annex structure and construct new 1200 SF lean-to annex.

Name:	Impact:	Status:	Description:
Air Installation Compatable:	No Effect	Closed	
Air Quality:	No Effect	Closed	
Water Resources:	No Effect	Closed	
Safety And Occupational Health:	No Effect	Closed	Possible small occurrences of asbestos mastic. Locations to be determined during the deign phase. Since demolition is involved a demolition notice letter must be sent to TDEC prior to demolition.
Hazardous Materials:	No Effect	Closed	Provide MSDS for paints, solvents, sealants, caulking and adhesives.
Hazardous Waste:	No Effect	Closed	
Biological Resources:	No Effect	Closed	During demolition and construction, provide site protection to prevent silt from leaving the site.
Cultural Resources:	Positive Effect	Open	This building has not yet been surveyed for historical significance. A recordation of this building will need to be accomplished prior to any demolition or construction.
Geology And Soils:	No Effect	Closed	
Socioeconomic:	No Effect	Closed	

Installation Restoration Program:	No Effect	Closed	

Other Impacts:

Remarks: FY07 scheduled project.

Determination: Further Environmental Analysis Required

Determination Justification: Will add this demolition to FY 05 Demolition EA and new 1200 sf. lean-to annex to the FY 05 Construction EA.

Environmental Planning Approval Signature ---- Philip Sherrill ***Comments*** ----

Environmental Final Approval Signature ---- Philip Sherrill ***Comments*** ----

Media Management Approval Signature ---- Pam King ***Comments*** ----

EIAP Approval Signature ---- Richard McWhite ***Comments*** ----

SDE Director Approval Signature ---- Frank Duncan ***Comments*** ----

User	Action	Date	Comments
Frank Duncan	promote	07-Sep-2004 12:10 PM	
Frank Duncan	connect	07-Sep-2004 12:10 PM	Has EIAP Action to EIAP Action 000218 - Environmental Analysis 0
Frank Duncan	connect	07-Sep-2004 12:10 PM	Has EIAP Action to EIAP Action 000218 - Cultural Resources 0
Frank Duncan	approve	07-Sep-2004 12:10 PM	
Richard W McWhite	approve	07-Sep-2004 11:27 AM	
Richard W McWhite	modify	07-Sep-2004 11:26 AM	Determination Justification: Will add this demolition to FY 05 Demolition EA and new 1200 sf. lean-to annex to the FY 05 Construction EA. was:
Richard W McWhite	modify	07-Sep-2004 11:26 AM	Determination: Further Environmental Analysis Required was: A2.3.8 Performing interior and exterior construction within the 5-foot line of a building.

Richard W McWhite	modify	07-Sep-2004 11:26 AM	Cultural Resources Impact: Positive Effect was: No Adverse Effect
Pamela F King	promote	01-Sep-2004 02:16 PM	
Pamela F King	approve	01-Sep-2004 02:16 PM	
Philip A Sherrill	approve	26-Aug-2004 02:22 PM	
Philip A Sherrill	promote	26-Aug-2004 02:22 PM	
Philip A Sherrill	checkin	26-Aug-2004 02:21 PM	Project Detail Sheet.htm
Philip A Sherrill	modify	26-Aug-2004 02:21 PM	Determination: A2.3.8 Performing interior and exterior construction within the 5-foot line of a building. was:
Philip A Sherrill	modify	26-Aug-2004 02:21 PM	Remarks: FY07 scheduled project. was:
Mark R Moran	modify	25-Aug-2004 03:36 PM	Cultural Resources Impact Description: This building has not yet been surveyed for historical significance. A recordation of this building will need to be accomplished prior to any demolition or construction. was:
Mark R Moran	modify	25-Aug-2004 03:36 PM	Biological Resources Impact Description: During demolition and construction, provide site protection to prevent silt from leaving the site. was:
Mark R Moran	modify	25-Aug-2004 03:36 PM	Cultural Resources Impact: No Adverse Effect was: Not Reviewed
Mark R Moran	promote	25-Aug-2004 03:36 PM	
Mark R Moran	modify	25-Aug-2004 03:36 PM	Biological Resources Impact: No Effect was: Not Reviewed
Mark R Moran	modify	25-Aug-2004 03:36 PM	Biological Resources Impact Status: Closed was: Open
Mark R Moran	approve	25-Aug-2004 03:36 PM	
H Ben Partin	modify	09-Aug-2004 10:22 AM	Hazardous Waste Impact: No Effect was: Not Reviewed
H Ben Partin	modify	09-Aug-2004 10:22 AM	Hazardous Waste Impact Status: Closed was: Open
Marion B Bragg	modify	05-Aug-2004 08:30 AM	Safety And Occupational Health Impact: No Effect was: Not Reviewed

Marion B Bragg	modify	05-Aug-2004 08:30 AM	Safety And Occupational Health Impact Description: Possible small occurrences of asbestos mastic. Locations to be determined during the deign phase. Since demolition is involved a demolition notice letter must be sent to TDEC prior to demolition. was:
Marion B Bragg	modify	05-Aug-2004 08:30 AM	Safety And Occupational Health Impact Status: Closed was: Open
Jeffrey K Holt	modify	04-Aug-2004 03:04 PM	Air Quality Impact Status: Closed was: Open
Jeffrey K Holt	modify	04-Aug-2004 03:04 PM	Air Quality Impact: No Effect was: Not Reviewed
Jeffrey K Holt	modify	04-Aug-2004 03:04 PM	Water Resources Impact: No Effect was: Not Reviewed
Jeffrey K Holt	modify	04-Aug-2004 03:04 PM	Water Resources Impact Status: Closed was: Open
Michael E Hodges	modify	04-Aug-2004 01:59 PM	Hazardous Materials Impact: No Effect was: Not Reviewed
Michael E Hodges	modify	04-Aug-2004 01:59 PM	Hazardous Materials Impact Status: Closed was: Open
Michael E Hodges	modify	04-Aug-2004 01:59 PM	Hazardous Materials Impact Description: Provide MSDS for paints, solvents, sealants, caulking and adhesives. was:
Dennis D. Flatt	modify	04-Aug-2004 01:48 PM	Installation Restoration Program Impact Status: Closed was: Open
Dennis D. Flatt	modify	04-Aug-2004 01:48 PM	Installation Restoration Program Impact: No Effect was: Not Reviewed
Dennis D. Flatt	modify	04-Aug-2004 01:48 PM	Geology And Soils Impact: No Effect was: Not Reviewed
Dennis D. Flatt	modify	04-Aug-2004 01:48 PM	Geology And Soils Impact Status: Closed was: Open
Philip A Sherrill	promote	04-Aug-2004 01:34 PM	
Philip A Sherrill	approve	04-Aug-2004 01:34 PM	
Philip A Sherrill	modify	04-Aug-2004 01:34 PM	Socioeconomic Impact: No Effect was: Not Reviewed
Philip A Sherrill	modify	04-Aug-2004 01:34 PM	Air Installation Compatible Impact: No Effect was: Not Reviewed
Philip A Sherrill	modify	04-Aug-2004 01:34 PM	Air Installation Compatible Impact Status: Closed was: Open
Philip A Sherrill	modify	04-Aug-2004 01:34 PM	Socioeconomic Impact Status: Closed was: Open
Kristopher M			

Hughes	promote	04-Aug-2004 01:28 PM	
Kristopher M Hughes	approve	04-Aug-2004 01:28 PM	
Michael G Gold	promote	04-Aug-2004 01:15 PM	
Michael G Gold	approve	04-Aug-2004 01:15 PM	
Michael G Gold	change name	04-Aug-2004 01:14 PM	was: Auto revision:
Michael G Gold	create	04-Aug-2004 01:14 PM	

Construct Bromine Trailer Storage Building

Environmental Impact Analysis: 000169 - CONSTRUCT BROMINE STORAGE FACILITY

From: Michael Gold	**Proponent Org:**ID10	**Project:**ANZY020009

Purpose And Need: Extend the life of the bromine trailer; provide safe and environmentally conscious storage of potentially hazardous materials out of the weather.

Description And Alternative: Construct building in the area of the ASTF Cooling Tower to store the portable bromine feeder trailer and oil drums. Requirements: drive thru doors to allow the bromine trailer to be pulled straight thru the building; curbed to provide spill protection and detection for the oil or the bromine stored; heated to prevent freezing of the piping, pumps, valves, hoses, etc. associated with the bromine cart; exhaust fan(s) and louvers to allow ventilation to control temperature in the summer and vent any bromine fumes that might be present; general lighting and several GFI power outlets for equipment and tools. The exterior of the building should match the exterior ot he new Cooling Tower structure and be positioned out of sight of Ave 'C' if possible. It should not be installed over the top of any of the buried cooling water piping. The building should have a safety shower and eyewash. It should also have a crane/lift to aid in moving, loading, and unloading of oil drums. Estimated size 20' X 40'.

Name:	Impact:	Status:	Description:
Air Installation Compatable:	No Effect	Closed	
Air Quality:	No Effect	Closed	
Water Resources:	Positive Effect	Closed	
Safety And Occupational Health:	No Effect	Closed	Possible lead paint issues if the walls of the old facilities are involved. Provide adequate ventilation to the building.
Hazardous Materials:	No Effect	Closed	Provide MSDS for paints, sealants, solvents, construction adhesives and caulking.
Hazardous Waste:	Positive Effect	Closed	
Biological Resources:	No Effect	Closed	Adequate site protection devices should be required to kkep silt and sediment from leaving the construction site.

Cultural Resources:	No Effect	Closed	Is in a heavily disturbed area of the base.
Geology And Soils:	No Effect	Closed	
Socioeconomic:	No Effect	Closed	
Installation Restoration Program:	No Effect	Closed	

Other Impacts:

Remarks:

Determination: Further Environmental Analysis Required

Determination Justification: Areas proposed for building construction must be evaluated. Include in the analysis any actions that have environmental effects in the old storage facility. Include this proposed action in AEDC Construction EA starting in early FY 2005

Environmental Planning Approval Signature — Philip Sherrill *Comments* —

Environmental Final Approval Signature — Philip Sherrill *Comments* —

Media Management Approval Signature — Pam King *Comments* —

EIAP Approval Signature — Richard McWhite *Comments* —

SDE Director Approval Signature — Frank Duncan *Comments* —

User	Action	Date	Comments
Philip A Sherrill	connect	03-Sep-2004 01:47 PM	Has EIA from FY Workload Plan 10851 0
Frank Duncan	promote	10-Jun-2004 10:40 AM	
Frank Duncan	connect	10-Jun-2004 10:40 AM	Has EIAP Action to EIAP Action 000169 - Environmental Analysis 0
Frank Duncan	approve	10-Jun-2004 10:40 AM	
Richard W McWhite	approve	10-Jun-2004 10:38 AM	

Richard W McWhite	modify	10-Jun-2004 10:38 AM	Determination Justification: Areas proposed for building construction must be evaluated.Include in the analysis any actions that have environmental effects in the old storage facility.Include this proposed action in AEDC Construction EA starting in early FY 2005 was: Areas proposed for building construction must be evaluated.Include in the analysis any actions that have environmental effects in the old storage facility.
Richard W McWhite	modify	10-Jun-2004 10:35 AM	Determination Justification: Areas proposed for building construction must be evaluated.Include in the analysis any actions that have environmental effects in the old storage facility. was: Areas proposed for building construction must be evaluated.
Pamela F King	promote	10-Jun-2004 08:02 AM	
Pamela F King	approve	10-Jun-2004 08:02 AM	
Philip A Sherrill	promote	19-May-2004 09:24 AM	
Philip A Sherrill	approve	19-May-2004 09:24 AM	
Philip A Sherrill	modify	19-May-2004 09:24 AM	Determination: Further Environmental Analysis Required was:
Philip A Sherrill	modify	19-May-2004 09:24 AM	Determination Justification: Areas proposed for building construction must be evaluated. was:
Marion B Bragg	modify	17-May-2004 02:22 PM	Safety And Occupational Health Impact Description: Possible lead paint issues if the walls of the old facilities are involved. Provide adequate ventilation to the building. was: Possible lead paint issues if the walls of the old facilities are involved.
Marion B Bragg	promote	17-May-2004 02:19 PM	
Marion B Bragg	approve	17-May-2004 02:19 PM	
Marion B Bragg	modify	17-May-2004 02:19 PM	Safety And Occupational Health Impact: No Effect was:
Marion B Bragg	modify	17-May-2004 02:19 PM	Safety And Occupational Health Impact Status: Closed was: Open
Marion B Bragg	modify	17-May-2004 02:19 PM	Safety And Occupational Health Impact Description: Possible lead paint issues if the walls of the old facilities are involved. was:

Mark R Moran	modify	10-May-2004 12:07 PM	Biological Resources Impact Status: Closed was: Open
Mark R Moran	modify	10-May-2004 12:07 PM	Biological Resources Impact Description: Adequate site protection devices should be required to kkep silt and sediment from leaving the construction site. was:
Mark R Moran	modify	10-May-2004 12:07 PM	Biological Resources Impact: No Effect was:
Michael E Hodges	modify	07-May-2004 11:00 AM	Hazardous Materials Impact Description: Provide MSDS for paints, sealants, solvents, construction adhesives and caulking. was:
Michael E Hodges	modify	07-May-2004 11:00 AM	Hazardous Materials Impact Status: Closed was: Open
Michael E Hodges	modify	07-May-2004 11:00 AM	Hazardous Materials Impact: No Effect was:
H Ben Partin	modify	07-May-2004 10:31 AM	Hazardous Waste Impact Status: Closed was: Open
H Ben Partin	modify	07-May-2004 10:31 AM	Hazardous Waste Impact: Positive Effect was:
Jeffrey K Holt	modify	07-May-2004 08:02 AM	Water Resources Impact Status: Closed was: Open
Jeffrey K Holt	modify	07-May-2004 08:02 AM	Air Quality Impact Status: Closed was: Open
Jeffrey K Holt	modify	07-May-2004 08:02 AM	Air Quality Impact: No Effect was:
Jeffrey K Holt	modify	07-May-2004 08:02 AM	Water Resources Impact: Positive Effect was:
Dennis D. Flatt	modify	07-May-2004 07:39 AM	Installation Restoration Program Impact Status: Closed was: Open
Dennis D. Flatt	modify	07-May-2004 07:39 AM	Geology And Soils Impact Status: Closed was: Open
Dennis D. Flatt	modify	07-May-2004 07:39 AM	Installation Restoration Program Impact: No Effect was:
Dennis D. Flatt	modify	07-May-2004 07:39 AM	Geology And Soils Impact: No Effect was:
Richard L Alvey	modify	07-May-2004 06:58 AM	Cultural Resources Impact Status: Closed was: Open
Richard L Alvey	modify	07-May-2004 06:58 AM	Cultural Resources Impact Description: Is in a heavily disturbed area of the base. was:
Richard L Alvey	modify	07-May-2004 06:58 AM	Cultural Resources Impact: No Effect was:
Philip A Sherrill	approve	06-May-2004 03:23 PM	

Philip A Sherrill	promote	06-May-2004 03:23 PM	
Philip A Sherrill	modify	06-May-2004 03:23 PM	Description And Alternative: Construct building in the area of the ASTF Cooling Tower to store the portable bromine feeder trailer and oil drums. Requirements: drive thru doors to allow the bromine trailer to be pulled straight thru the building; curbed to provide spill protecti was: Construct building in the area of the ASTF CT to store the portable bromine feeder trailer and oil drums. Requirements: drive thru doors to allow the bromine trailer to be pulled straight thru the building; curbed to provide spill protection and dete
Philip A Sherrill	modify	06-May-2004 03:22 PM	Socioeconomic Impact Status: Closed was: Open
Philip A Sherrill	modify	06-May-2004 03:22 PM	Air Installation Compatible Impact: No Effect was:
Philip A Sherrill	modify	06-May-2004 03:22 PM	Air Installation Compatible Impact Status: Closed was: Open
Philip A Sherrill	modify	06-May-2004 03:22 PM	Socioeconomic Impact: No Effect was:
Scott Williams	change vault	27-Apr-2004 11:58 AM	was: ACS
Kristopher M Hughes	promote	15-Apr-2004 07:47 AM	
Kristopher M Hughes	approve	15-Apr-2004 07:47 AM	
Michael G Gold	promote	15-Apr-2004 06:53 AM	
Michael G Gold	approve	15-Apr-2004 06:53 AM	
Michael G Gold	change name	15-Apr-2004 06:53 AM	was: Auto revision:
Michael G Gold	create	15-Apr-2004 06:53 AM	

ACES PROJECT MANAGEMENT DATABASE

Long Range Plan Project Detail Sheet

ACES PROJECT: ANZY020009 TITLE: CONSTRUCT BROMINE STORAGE FACILITY

JOB NUMBER: 10851

WORK REQUEST: 0089450

WORK REQUEST APPROVAL DATE: 7/21/2004

CATEGORY: UTILITY

SYSTEM: COOLINGWA

FY: 2006

PROGRAM TYPE: O&M

FACILITY NUMBER: 1090

FUNDING SOURCE: SRM

BUSINESS AREA: F/I

ESTIMATED COST

IN HOUSE LABOR:	$0
IN HOUSE MATERIAL:	$0
GFE AMOUNT:	$54,500
PROJECT MANAGEMENT:	$2,500
TOTAL EXECUTION COST:	$57,000

DESIGN COST: $7,500

STATUS

LOCAL STATUS: NOTINDESIGN

COMMAND STATUS: BSE

DESIGN % COMPLETE:

FIM RATING: ESS

PROJECT SCOPE:

Construct building in the area of the ASTF CT to store the portable bromine feeder trailer and oil drums. Requirements: drive thru doors to allow the bromine trailer to be pulled straight thru the building; curbed to provide spill protection and detection for the oil or the bromine stored; heated to prevent freezing of the piping, pumps, valves, hoses, etc. associated with the bromine cart; exhaust fan(s) and louvers to allow ventilation to control temperature in the summer and vent any bromine fumes that might be present; general lighting and several GFI power outlets for equipment and tools. The exterior of the building should match the exterior ot he new Cooling Tower structure and be positioned out of sight of Ave 'C' if possible. It should not be installed over the top of any of the buried cooling water piping. The building should have a safety shower and eyewash. It should also have a crane/lift to aid in moving, loading, and unloading of oil drums. Estimated size 20' X 40'.

JUSTIFICATION:

Extend the life of the bromine trailer; provide safe and environmentally conscious storage of potentially hazardous materials out of the weather.

Construct New Running Track

Environmental Impact Analysis: 000499 - Construct Running Track		
From: Mike Gold	**Proponent Org:**ID10	**Project:**ANZY050009

Purpose And Need: Provides a suitable area for timed runs, fitness testing and group exercise—no need to run on roads or loose gravel

Description And Alternative: Construct a quarter mile track with rubberized running surface; Construct a 3000 SF warm-up/stretching pad adjacent to the track. The proposed location is within the circle of Kindel Drive on the south end (See attached).

Name:	Impact:	Status:	Description:
Air Installation Compatable:	No Effect	Closed	
Air Quality:	No Effect	Closed	
Water Resources:	Unknown Effect	Open	If the total disturbed area of land equals or exceeds 1 acre, then the project must develop a storm water P2 plan, submit a Notice of Intent to TDEC, pay the appropriate fees, etc. prior to start of construction.
Safety And Occupational Health:	No Effect	Closed	
Hazardous Materials:	No Effect	Closed	
Hazardous Waste:	No Effect	Closed	
Biological Resources:	No Effect	Closed	Site protection devices should be installed and maintained throughout construction to prevent silt and sediment from entering the storm drainage system.
Cultural Resources:	Unknown Effect	Open	The proposed site has not had a Phase I survey for archaeological sites completed and one must be completed to showing that no significant sites are present before construction can begin.
Geology And Soils:	No Effect	Closed	
Socioeconomic:	No Effect	Closed	

Other Impacts:

Remarks:

Determination: Further Environmental Analysis Required

Determination Justification: This proposed activity will be added to the Construction EA.

Environmental Planning Approval Signature --- Philip Sherrill *Comments* ---

Media Management Approval Signature ---- Pam King	***Comments*** ----
EIAP Approval Signature ---- Richard McWhite	***Comments*** ---- Phase 1 Archaeological Survey required and EA required.

Upgrade Skimming Lagoon

Environmental Impact Analysis: 000075 - UPGRADE/MAINTAIN SKIMMING LAGOON

From: Michael Gold	**Proponent Org:** ID10	**Project:** ANZY010027A/B

Purpose And Need: Failure to maintain the skimming lagoon in proper operating condition may impact the base's ability to perform the mission within regulated environmental constraints.

Description And Alternative: 1. Install a permanent fuel/water separator with a flow capacity of 100gpm. It should have an internal fuel storage compartment with a minimum capacity of 500gal.; 2. Install an electric air compressor with the capacity to supply air to a drum skimmer, weir skimmer, and three air powered pumps, all in concurrent use.(approximately equal to the capacity of the portable unit presently being used); 3. Provide a storage building at the lagoon site for the storage of spill equipment, safety equipment, coveralls, storage area for a small boat, etc. (approx. size 20' x 20'). The building should have lights, heat, and electrical outlets for charging radios, O2 meters, and other portable equipment.; 4. Gravel staging area for handling and temproary storage of at least six 1500 gal polytanks on trailers. See attached SRD for detailed info.

Name:	Impact:	Status:	Description:
Air Installation Compatable:	No Effect	Closed	
Air Quality:	No Effect	Closed	
Water Resources:	Positive Effect	Closed	The new OWS will fall under the bulk storage container requirements of 40CFR112. Design must incorporate provisions to comply with these requirements.
Safety And Occupational Health:	No Effect	Closed	Follow OSHA standards for work around water. Wear proper PPE for removal and cleanup of boom due to contact with hazardous substances during past spills.
Hazardous Materials:	No Effect	Closed	
Hazardous Waste:	No Effect	Closed	
Biological Resources:	No Effect	Closed	
Cultural Resources:	No Effect	Closed	Not an historic property
Geology And Soils:	No Effect	Closed	
Socioeconomic:	No Effect	Closed	
Installation Restoration Program:	No Effect	Closed	

Other Impacts:

Remarks: See attached file.

Determination: A2.3.14 Installing on previously developed land, equipment that does not substantially alter land use.

Determination Justification: Area has been previously hardened with gravel. The only utilites are electrical which should be overhead.

Environmental Planning Approval Signature ---- Philip Sherrill *Comments* ----

Environmental Final Approval Signature ---- Philip Sherrill *Comments* ----

Media Management Approval Signature ---- Pam King *Comments* ----

EIAP Approval Signature ---- Richard McWhite *Comments* ----

SDE Director Approval Signature ---- Frank Duncan *Comments* ----

User	Action	Date	Comments
Philip A Sherrill	checkout	11-Oct-2004 10:26 AM	SitePlan.pdf
Philip A Sherrill	checkout	11-Oct-2004 10:26 AM	SitePlan.pdf
Philip A Sherrill	checkout	11-Oct-2004 10:25 AM	10718 - Upgrade Skimming Lagoon SRD.doc
Frank Duncan	promote	15-Sep-2004 01:27 PM	
Frank Duncan	approve	15-Sep-2004 01:27 PM	
Richard W McWhite	approve	15-Sep-2004 11:12 AM	
Philip A Sherrill	modify	03-Sep-2004 10:22 AM	Determination: A2.3.14 Installing on previously developed land, equipment that does not substantially alter land use. was: A2.3.9 Repairing and replacing real property installed equipment.
Philip A Sherrill	checkin	03-Sep-2004 10:22 AM	SitePlan.pdf
Philip A Sherrill	modify	03-Sep-2004 10:22 AM	Determination Justification: Area has been previously hardened with gravel. The only utilites are electrical which should be overhead. was:
Philip A Sherrill	modify	03-Sep-2004 10:22 AM	Hazardous Waste Impact Description: was: The booms would be solid waste that could not go to C&D Landfill. But they could be disposed of as a special waste via a roll off box.
Philip A Sherrill	checkin	03-Sep-2004 10:17 AM	10718 - Upgrade Skimming Lagoon SRD.doc
Philip A Sherrill	delete file	03-Sep-2004 10:17 AM	Turbidity_Curtain.pdf

Philip A Sherrill	modify	03-Sep-2004 10:17 AM	Purpose And Need: Failure to maintain the skimming lagoon in proper operating condition may impact the base's ability to perform the mission within regulated environmental constraints. was: The manufacturer provides an anticipated life of 7 years; the boom was been installed in June 1996. This is part of the lifecycle sustainment of this system. Failure to maintain the skimming lagoon in proper operating condition may impact the base's
Philip A Sherrill	modify	03-Sep-2004 10:17 AM	Description And Alternative: 1. Install a permanent fuel/water separator with a flow capacity of 100gpm. It should have an internal fuel storage compartment with a minimum capacity of 500gal.; 2. Install an electric air compressor with the capacity to supply air to a drum skimm was: Replace existing turbidity curtain/boom in skimming lagoon. There may also be some disposal costs associated with getting rid of the old curtain,one option would be to get roll off boxes, put the old curtain in them and have it trucked off to AEDC co
Philip A Sherrill	demote	03-Sep-2004 10:12 AM	
Richard W McWhite	approve	23-Jun-2004 09:59 AM	Project includes construction of a 20X20 building. Put on hold until SRR to determine site selection and potential impacts to wetlands or streams.
Richard W McWhite	promote	23-Jun-2004 09:59 AM	
Pamela F King	promote	22-Jun-2004 09:09 PM	
Pamela F King	approve	22-Jun-2004 09:09 PM	
Philip A Sherrill	modify	09-Jun-2004 10:34 AM	Water Resources Impact Description: The new OWS will fall under the bulk storage container requirements of 40CFR112. Design must incorporate provisions to comply with these requirements. was:
Philip A Sherrill	promote	17-May-2004 02:36 PM	
Philip A Sherrill	approve	17-May-2004 02:36 PM	
Philip A Sherrill	modify	17-May-2004 02:36 PM	Determination: A2.3.9 Repairing and replacing real property installed equipment. was:
Marion B Bragg	modify	17-May-2004 11:18 AM	Safety And Occupational Health Impact: No Effect was:
Marion B Bragg	promote	17-May-2004 11:18 AM	

Marion B Bragg	modify	17-May-2004 11:18 AM	Safety And Occupational Health Impact Status: Closed was: Open
Marion B Bragg	modify	17-May-2004 11:18 AM	Safety And Occupational Health Impact Description: Follow OSHA standards for work around water. Wear proper PPE for removal and cleanup of boom due to contact with hazardous substances during past spills. was:
Marion B Bragg	approve	17-May-2004 11:18 AM	
Mark R Moran	modify	05-May-2004 11:01 AM	Biological Resources Impact: No Effect was: Unknown Effect
Mark R Moran	modify	05-May-2004 11:01 AM	Biological Resources Impact Description: was: Can't make fair assessment without knowing the location of the new facility.
Mark R Moran	modify	05-May-2004 11:01 AM	Biological Resources Impact Status: Closed was: Open
H Ben Partin	modify	28-Apr-2004 01:02 PM	Hazardous Waste Impact Status: Closed was: Open
Scott Williams	change vault	27-Apr-2004 11:53 AM	was: ACS
Mark R Moran	modify	26-Apr-2004 03:13 PM	Biological Resources Impact Description: Can't make fair assessment without knowing the location of the new facility. was:
Mark R Moran	modify	26-Apr-2004 03:13 PM	Biological Resources Impact: Unknown Effect was:
Jeffrey K Holt	modify	26-Apr-2004 02:34 PM	Water Resources Impact Status: Closed was: Open
Jeffrey K Holt	modify	26-Apr-2004 02:34 PM	Air Quality Impact Status: Closed was: Open
Jeffrey K Holt	modify	26-Apr-2004 02:34 PM	Air Quality Impact: No Effect was:
Jeffrey K Holt	modify	26-Apr-2004 02:34 PM	Water Resources Impact: Positive Effect was:
Michael E Hodges	modify	26-Apr-2004 01:41 PM	Hazardous Materials Impact: No Effect was:
Michael E Hodges	modify	26-Apr-2004 01:41 PM	Hazardous Materials Impact Status: Closed was: Open
H Ben Partin	modify	26-Apr-2004 12:48 PM	Hazardous Waste Impact Description: The booms would be solid waste that could not go to C&D Landfill. But they could be disposed of as a special waste via a roll off box. was:
		26-Apr-2004 12:48	

H Ben Partin	modify	PM	Hazardous Waste Impact: No Effect was:
Richard L Alvey	modify	26-Apr-2004 12:33 PM	Cultural Resources Impact: No Effect was:
Richard L Alvey	modify	26-Apr-2004 12:33 PM	Cultural Resources Impact Status: Closed was: Open
Richard L Alvey	modify	26-Apr-2004 12:33 PM	Cultural Resources Impact Description: Not an historic property was:
Philip A Sherrill	modify	26-Apr-2004 12:20 PM	Remarks: See attached file. was:
Philip A Sherrill	checkin	26-Apr-2004 12:20 PM	Turbidity_Curtain.pdf
Dennis D. Flatt	modify	26-Apr-2004 12:15 PM	Geology And Soils Impact: No Effect was:
Dennis D. Flatt	modify	26-Apr-2004 12:15 PM	Installation Restoration Program Impact Status: Closed was: Open
Dennis D. Flatt	modify	26-Apr-2004 12:15 PM	Geology And Soils Impact Status: Closed was: Open
Dennis D. Flatt	modify	26-Apr-2004 12:15 PM	Installation Restoration Program Impact: No Effect was:
Philip A Sherrill	promote	26-Apr-2004 12:08 PM	
Philip A Sherrill	approve	26-Apr-2004 12:08 PM	
Philip A Sherrill	modify	26-Apr-2004 12:08 PM	Air Installation Compatible Impact: No Effect was:
Philip A Sherrill	modify	26-Apr-2004 12:08 PM	Air Installation Compatible Impact Status: Closed was: Open
Philip A Sherrill	modify	26-Apr-2004 12:08 PM	Socioeconomic Impact Status: Closed was: Open
Philip A Sherrill	modify	26-Apr-2004 12:08 PM	Socioeconomic Impact: No Effect was:
Kristopher M Hughes	promote	12-Apr-2004 08:31 AM	
Kristopher M Hughes	approve	12-Apr-2004 08:31 AM	
Michael G Gold	promote	09-Apr-2004 01:40 PM	

Michael G Gold	approve	09-Apr-2004 01:40 PM	
Michael G Gold	change name	09-Apr-2004 11:48 AM	was: Auto revision:
Michael G Gold	create	09-Apr-2004 11:48 AM	

Construct New Security Fence

Environmental Impact Analysis: 000178 - CONSTRUCT SECURITY FENCE

From: Michael Gold	**Proponent Org:** ID10	**Project:** ANZY040040

Purpose And Need: Provide increased security.

Description And Alternative: Install a chain-link fence to divide the "Industrial Zone" from the community support area and fitness track (see drawing attached to WR 0158957). Fence should completely surround the fitness track, then encircle the area containing the A&E bldg, Medical Aid Station, and the BX/Commissary. Install card readers and personnel gates to allow pedestrian access between the zones. Install a motorized vehicle gate with card reader to allow after-hours access to the industrial zone.

Name:	Impact:	Status:	Description:
Air Installation Compatable:	No Effect	Closed	
Air Quality:	No Effect	Closed	
Water Resources:	Adverse Effect	Open	Assuming this construction activity will disturb one acre of land or more, then the construction contractor will be required to prepare a Storm Water Pollution Prevention Plan that meets the TDEC/EPA requirements for construction activities. A Notice of Intent must be prepared for Air Force signature and the appropriate fees must be paid. At the conclusion of the project, a Notice of Termination must also be prepared for Air Force signature.
Safety And Occupational Health:	No Effect	Closed	No immediate health or safety issues are obvious. Follow OSHA and EPA regulations and ensure that the fence and gates are installed to allow safe traffic flow of vehicles and pedestrians.
Hazardous Materials:	No Effect	Closed	
Hazardous Waste:	No Effect	Closed	
Biological Resources:	No Effect	Closed	Can't tell from the drawing whether any clearing will be necessary. If clearing is necessary, adequate site protection will be required to prevent any silt or sediments from leaving the fence construction site.

Cultural Resources:	Unknown Effect	Open	Portions of the area to be affected have been surveyed and cleared for cultural resources. Other portions have not been. The previously unsurveyed portion of the fence ROW will be surveyed to determine if there are unreported cultural resources which might be affected.
Geology And Soils:	No Effect	Closed	
Socioeconomic:	No Effect	Closed	
Installation Restoration Program:	No Effect	Closed	

Other Impacts:

Remarks: See attachment for approximate location of fence

Determination: Further Environmental Analysis Required

Determination Justification:

Environmental Planning Approval Signature — Philip Sherrill *Comments* —

Environmental Final Approval Signature — Philip Sherrill *Comments* —

Media Management Approval Signature — Pam King *Comments* —

EIAP Approval Signature — Richard McWhite *Comments* — EA required. Two open items.

SDE Director Approval Signature — Frank Duncan *Comments* —

User	Action	Date	Comments
Philip A Sherrill	connect	03-Sep-2004 02:08 PM	Has EIA from FY Workload Plan 10857 0
Frank Duncan	connect	10-Jun-2004 12:54 PM	Has EIAP Action to EIAP Action 000178 - Environmental Analysis 0
Frank Duncan	connect	10-Jun-2004 12:54 PM	Has EIAP Action to EIAP Action 000178 - Cultural Resources 0
Frank Duncan	connect	10-Jun-2004 12:54 PM	Has EIAP Action to EIAP Action 000178 - Water Resources 0
Frank Duncan	promote	10-Jun-2004 12:54 PM	

Frank Duncan	approve	10-Jun-2004 12:54 PM	
Richard W McWhite	approve	10-Jun-2004 12:45 PM	EA required. Two open items.
Richard W McWhite	modify	10-Jun-2004 12:41 PM	Cultural Resources Impact Description: Portions of the area to be affected have been surveyed and cleared for cultural resources. Other portions have not been. The previously unsurveyed portion of the fence ROW will be surveyed to determine if there are unreported cultural resources which was: Portions of the area to be affected have been surveyed and cleared for cultural resources. Other portions have not been. The previously unsurveyed portion of the fence ROW should be surveyed to determine if there are unreported cultural resources whic
Pamela F King	promote	10-Jun-2004 08:05 AM	
Pamela F King	approve	10-Jun-2004 08:05 AM	
Philip A Sherrill	approve	24-May-2004 10:05 AM	
Philip A Sherrill	promote	24-May-2004 10:05 AM	
Philip A Sherrill	modify	24-May-2004 10:04 AM	Determination: Further Environmental Analysis Required was:
Mark R Moran	approve	24-May-2004 07:01 AM	
Mark R Moran	promote	24-May-2004 07:01 AM	
Mark R Moran	modify	24-May-2004 07:01 AM	Biological Resources Impact Description: Can't tell from the drawing whether any clearing will be necessary. If clearing is necessary, adequate site protection will be required to prevent any silt or sediments from leaving the fence construction site. was:
Mark R Moran	modify	24-May-2004 07:01 AM	Biological Resources Impact: No Effect was:
Mark R Moran	modify	24-May-2004 07:01 AM	Biological Resources Impact Status: Closed was: Open
Marion B Bragg	modify	20-May-2004 07:43 AM	Safety And Occupational Health Impact Description: No immediate health or safety issues are obvious. Follow OSHA and EPA regulations and ensure that the fence and gates are installed to allow safe traffic flow of vehicles and pedestrians. was:

Marion B Bragg	modify	20-May-2004 07:43 AM	Safety And Occupational Health Impact: No Effect was:
Marion B Bragg	modify	20-May-2004 07:43 AM	Safety And Occupational Health Impact Status: Closed was: Open
H Ben Partin	modify	19-May-2004 03:35 PM	Hazardous Waste Impact: No Effect was:
H Ben Partin	modify	19-May-2004 03:35 PM	Hazardous Waste Impact Status: Closed was: Open
Dennis D. Flatt	modify	19-May-2004 12:08 PM	Installation Restoration Program Impact Status: Closed was: Open
Dennis D. Flatt	modify	19-May-2004 12:08 PM	Installation Restoration Program Impact: No Effect was:
Dennis D. Flatt	modify	19-May-2004 12:08 PM	Geology And Soils Impact Status: Closed was: Open
Dennis D. Flatt	modify	19-May-2004 12:08 PM	Geology And Soils Impact: No Effect was:
Richard L Alvey	modify	19-May-2004 11:55 AM	Cultural Resources Impact: Unknown Effect was:
Richard L Alvey	modify	19-May-2004 11:55 AM	Cultural Resources Impact Description: Portions of the area to be affected have been surveyed and cleared for cultural resources. Other portions have not been. The previously unsurveyed portion of the fence ROW should be surveyed to determine if there are unreported cultural resources whic was:
Michael E Hodges	modify	19-May-2004 10:46 AM	Hazardous Materials Impact Status: Closed was: Open
Michael E Hodges	modify	19-May-2004 10:46 AM	Hazardous Materials Impact: No Effect was:
Jeffrey K Holt	modify	19-May-2004 10:44 AM	Water Resources Impact: Adverse Effect was:
Jeffrey K Holt	modify	19-May-2004 10:44 AM	Water Resources Impact Description: Assuming this construction activity will disturb one acre of land or more, then the construction contractor will be required to prepare a Storm Water Pollution Prevention Plan that meets the TDEC/EPA requirements for construction activities. A Notice was:
Jeffrey K Holt	modify	19-May-2004 10:44 AM	Air Quality Impact Status: Closed was: Open
Jeffrey K Holt	modify	19-May-2004 10:44 AM	Air Quality Impact: No Effect was:
Philip A Sherrill	approve	19-May-2004 10:38 AM	
Philip A Sherrill	promote	19-May-2004 10:38 AM	

Philip A Sherrill	checkin	19-May-2004 10:37 AM	Industrial Fence.JPG
Philip A Sherrill	modify	19-May-2004 10:37 AM	Air Installation Compatible Impact: No Effect was:
Philip A Sherrill	modify	19-May-2004 10:37 AM	Air Installation Compatible Impact Status: Closed was: Open
Philip A Sherrill	modify	19-May-2004 10:37 AM	Remarks: See attachment for approximate location of fence was:
Philip A Sherrill	modify	19-May-2004 10:37 AM	Socioeconomic Impact: No Effect was:
Philip A Sherrill	modify	19-May-2004 10:37 AM	Socioeconomic Impact Status: Closed was: Open
Kristopher M Hughes	promote	19-May-2004 08:58 AM	
Kristopher M Hughes	approve	19-May-2004 08:58 AM	
Michael G Gold	promote	06-May-2004 10:46 AM	
Michael G Gold	approve	06-May-2004 10:46 AM	
Michael G Gold	change name	06-May-2004 10:46 AM	was: Auto revision:
Michael G Gold	create	06-May-2004 10:46 AM	

Appendix B
Site Photographs

Photo 1. Proposed Civil Engineering Complex Site, looking north.

Photograph 2. Proposed New PMEL/Chemistry Lab Site, looking north.

Photo 3. Proposed Fuel Laboratory Site, looking north.

Photograph 4. Proposed BX Annex Site, looking north.

Photo 5. Proposed Bromine Storage Trailer Building Site, looking north.

Photograph 6. Proposed Fitness Center Site, looking east.

Photo 7. Proposed Running Track Site, looking east.

Photo 8. Proposed Skimming Lagoon Separator Site, looking north.